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## EDITORIAL.

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With the present number the PEDAGOGICAL SEMINARY enters upon its fourth volume, and with a larger circulation and better prospects than ever before. The policy of excluding advertisements, printing at irregular intervals, or whenever enough matter of the kind desired is at hand, disadvantageous as both are from a financial point of view, has not prevented the steady growth of our subscription list, in the quality of which we take especial pride.

In the present number it has been deemed wise to give up the space usually devoted to digests and criticism of current pedagogical literature to original matter, more of which than ever before is now pressing upon our columns. In the first article Mr. Bohannon digests reports concerning over one thousand peculiar or exceptional children. His method was first to condense each report to the briefest possible form, which should, nevertheless, preserve the salient features of that case. These were grouped, a few of each printed as a basis of discussion, and the sequence of groups arranged by contrast; e. g., children exceptionally small for their age, and the effects and treatment of undersize, followed the group of exceptionally large children, and so of beautiful and ugly, deft and clumsy, weak and strong, keenness and defect of sense, exceptional precocity and slowness of development, clean and dirty, selfish

and generous, loquacious and taciturn, brave and cowardly, sweet and ugly tempered, orderly and disorderly, etc. He also introduces the reader to a more extended study of *only children*, to appear later. How opposite the treatment often needed by these different classes of children is apparent, and it is shown here in a new light how essential is a knowledge and appreciation of individualities against the uniformitizing tendencies of mass education. The author's chief interest, however, was in the light his study shed upon heredity, where he has new conclusions for science.

Mr. Shaw has devised and applied a method of studying the memory in school which, full of drudgery as it is, brings out clearly some interesting and very practical new points. The slight variations of memory power for this kind of matter, all the way from the seventh grammar grade through the university, the real improvement of about five per cent. given by Miss Aiken's drill, the order in which different words, clauses, and matter appealing to different centres fade as we descend the scale of memory power, have never been so clearly shown.

Dr. Lukens has by the long and patient study of 3,400 drawings of children, reached conclusions which are not only new and interesting for psychology, but which mean a pretty radical reconstruction of most current methods of drawing, and suggest that some of our most widely used methods and systems invert nature. His 41 illustrations well illustrate his position.

Finally, Miss Wiltse has collected facts with great diligence and epitomized the progress of child study during the year ending Sept. 1, 1896. Her review of the Chicago Congress brings out many new points, and her comments on the Buffalo meeting will interest even those who may not agree with her. Nothing yet printed sets forth so clearly the amazing progress this new movement is now making.

# A STUDY OF PECULIAR AND EXCEPTIONAL CHILDREN.

BY E. W. BOHANNON,

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## INTRODUCTION.

The basis of the present study is a collection of reports received in response to the syllabus printed below.

### PECULIAR AND EXCEPTIONAL CHILDREN.

If you desire to receive the syllabi of this school year, to co-operate in collecting data, and to receive the final reports of the work, you are hereby respectfully invited:

I. To think over your own childhood and consider if you were a striking illustration of any of the following types, and if so, describe your case.

II. Consider if you have any friends who would come into any of the classes below, and ask them to describe their own case.

III. If you have children of your own, or if you are a teacher, if any of your pupils, past or present, are strikingly exceptional, describe them.

IV. If you are a college or normal instructor, explain very fully what is wanted, and ask each pupil to describe one or more such cases in a composition, essay, or a theme in psychology.

V. State the salient points concerning any exceptional children you ever read of, whether fact or fiction, referring to the source if you can.

The following are types suggested to select from, but any others will be welcome:

1. *Physical*: Exceptional beauty or ugliness; largeness or smallness; any bodily deformity; conspicuous scars or traumatic lesions; defects of sense or limb, as dimness of vision or slightly under normal hearing, weakness of spine, legs or arms, etc.; exceptional strength, agility, clumsiness or deftness, or gifts of sense; any other marked physical peculiarity.

2. *Psychical*: A child of exceptional courage or timidity; cleanliness or dirtiness; order or disorder; obedience or disobedience; truth telling or lying; cruelty or sympathy; selfishness or generosity; loquacity or silence; frankness or secretiveness; buoyancy or despondency; daintiness or gluttony; a blasé or otherwise spoiled child; a doubter, investigator or critic; a buffoon; a restless, fickle scatter-brain or a tenacious child; an ugly and ill-tempered child; a careless, easy-going or a fastidious child; an inquisitive, imaginative or poetic

child; a teaser or hector; a nervous child; a querulent, whining child; a dignified and self-poised child, or one who acts habitually with abandon.

It is not a description of one or more of the above traits that is wanted, but an account of one or more individual cases where one trait or group of traits is so marked as to color the entire character of the child, to be known to all who see much of it, to therefore bear on the child's future career.

Note in each case, if you can, whether the trait is hereditary; in which parent, how far back can it be traced, and how marked was it in the ancestry? To this point the greatest importance is attached, and it should receive special attention.

Give, briefly, specific acts or instances of the manifestation of the trait.

State how each case *has been* treated at home and in school, and how *you think it should be*.

Always describe each case with the greatest conciseness and with the greatest fidelity to fact.

Always state age, sex, nationality, complexion and temperament.

Always write on but one side of your paper.

Begin every new case on a new page.

Write at the head of the first page of each case one or more words designating the type, as a dirty child, a precocious child, etc.

Send returns to

G. STANLEY HALL,  
or E. W. BOHANNON.

Clark University, Worcester, Mass.,

Oct. 17, 1895.

Altogether 1,045 cases were described. About 850 of these came from Miss Lillie A. Williams, of the New Jersey State Normal School at Trenton; about 75 from Pres. Geo. C. Purington, of the State Normal School at Farmington, Me.; a like number from Mrs. A. R. Hornbrook, of the Evansville, Ind., High School, and 35 or 40 from personal sources and friends. Every report bears evidence of sincerity, and practically all, of thoughtful, careful preparation. Those from Trenton were prepared under the personal supervision of Miss Williams, and constituted a part of the regular work of her students in psychology. They are of the very highest value, and without them the study could hardly have been made. Grateful acknowledgment is here made to all those who have contributed so largely of their time and energy in answering the questions of the syllabus.

Of the whole number of cases reported 613 are girls, and 432 are boys. Fourteen of the 1,045 reports do not appear in some of the percentages to be presented later, because the number of cases in any of the types which they represent is too small to be of any value in tabulation. Not counting this 14, and including the group of "Only Children," 43 types are included. The individuals described are of various ages, but nearly all are below the period of early manhood or woman-

hood ; at least the peculiarity is described as it appeared before that time.

The study was suggested by the manifest need for a more intimate knowledge of the individual life of children. This knowledge depends upon a better understanding of certain biological factors. As Maudsley<sup>1</sup> has said : "In the outset I make two general assumptions : that a man is what he is at any period of life, first, by virtue of the original qualities which he has received from his ancestors, and, secondly, by virtue of the modifications which have been effected in his original nature by the influence of education and of the conditions of life. But what a complex composition of causes and conditions do these simple statements import."

All children are peculiar and exceptional in some degree. Any classification of them is, therefore, in a sense misleading and does violence to the inmost nature. The demand for organization in accordance with scientific principles, however valuable such organization may be in certain respects, seems only to have blinded many to the fact that there is a most vital something in every human being that will not yield to classification. Yet it would be dangerous to forget for a single moment that there are many points of agreement between all individuals. Neither aspect of life may be omitted in the consideration of the other. The purpose is simply to help to a better understanding of, and appreciation for, the peculiar and individual in the life of the child, that which belongs to one child only and distinguishes from other children. It is not the purpose to determine how far the one or the other of these two lines of growth should be emphasized, nor is it the thought that there is necessarily a conflict between them. Chief among the difficulties which are incident, therefore, to such a study, is the fact that only a limited number of individuals can be studied, and that individuality reveals itself but imperfectly to others.

It is possible to present only a very few (and these in the most condensed form) of the reported cases of the various types. All, however, are taken into account in the tables which appear later. The presentation of data will be followed by its statistical analysis, and such conclusions as seem to be warranted therefrom. The statistics relate especially to the relative inheritance of advantageous and disadvantageous peculiarities, to nationality, and temperament.

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<sup>1</sup> Maudsley's "Pathology of Mind," p. 87.

## REPORTS ILLUSTRATIVE OF THE TYPES.

## HEAVY.

1. M. 15 yrs. old. Light. Phlegmatic. Grew very large after 13 and is taken to be 20. Not clumsy or awkward. Good natured, easy, and well liked. Associates with men of 20 and 25. Grandparents large and sinewy.

2. M. 12 yrs. old. Weighs 172 pounds. 4 ft. 7 ins. tall in stocking feet. Head measured 22 ins., waist 45, and chest 40. Well formed and enjoys excellent health. Eats as much as two ordinary men. Has high standing at school. Is ambitious to be a big man. Much noticed, but does not mind it. Father weighs 215.

3. M. 5 yrs. old. Irish. Weighed 80 lbs. at 4. Noticed so much that his mother was ashamed to give his age. Mother large.

4. F. 8 yrs. old, weighs 100 lbs. 4 ft. tall. Girls often call her "Mutton Chops," on account of her stoutness. Mother and grandmother quite large.

5. F. 17 yrs. old. Light. As large at 12 as now. Larger at 14 than now. More expected of me at school on account of my size. Father had growth early.

6. F. 16 yrs. old. Dark. Weighed 160 lbs. Made herself prominent. Not sensitive. Father very large. Mother small.

7. F. 11 yrs. old. Nervous. Weighed 150 lbs. 5 ft. 7 ins. tall. Brothers and sisters often call her "fatty." This discourages her and frequently causes her to go into her room and cry. Mother weighs 220, and her father and grandfather are of unusual size.

8. F. 7 yrs. old. Weighed 140 at 5. Children call her "fatty." This makes her angry and she has become impudent. Mother large.

9. F. 12 yrs. old. Light. Weighed 90 pounds at 6. Good natured. Called "Baby Jumbo" and "Little 500 pounds." Mother, and her parents large.

10. F. 10 yrs. old. Light. Strong and self-willed. Weighed 110. Is bright and quick. Much noticed. Delights in rough, boyish sports. Would jump on bare-backed horse, put her arms about its neck, her feet against the sides, and sail along the road in great delight.

## THE TALL.

11. F. 7 yrs. old. 5 ft. tall. Taken to be 14 years old. Thinks it terrible to be so tall. Associates with older girls. Mother tall.

12. F. 13 years old. 5 feet 8 ins. in height. Not allowed to go out with family and kept out of sight as much as possible. Termed a "big, lanky thing." Same treatment at school.

13. F. 15 yrs. old. 5 feet 9 ins. in height. Grew rapidly. Tallest girl for miles around. Every one remarked on her height. Treated as older than she was. Parents tall.

14. F. 15 yrs. old. 6 ft. tall. Looked much older. People ask her "how much longer," "how much taller," etc., she is going to grow. Parents seem to think she ought to know everything because she is large.

15. M. 10 yrs. old. Unusually tall and large, taken to be 16 or 18. Was a coward. Teased. Ancestors large.

## STOUT.

16. M. 21 yrs old. Weighs 115 pounds. About 4 ft. tall. Concoited. Quick-tempered. Teased a great deal.

17. F. 13 years old. Weighs 104 pounds. Fair. Happy. Joked about her stoutness, but does not seem to mind. Father stout.

18. M. 40 yrs. old. Weight 150 pounds. 4 ft. tall. Pointed out as curiosity.

The following table gives the average heights and weights of boys and girls, for each year, between the years of eleven and twenty, in seven different countries. These general averages of both sexes for the various years may be relied upon as fairly approximating the average weight of any individual of normal

TABLE I. HEIGHT OF BODY IN CENTIMETRES.

| Height<br>in<br>Years. | Norwegian<br>Commission. |        | Swedish<br>Committee. |        | Danish<br>Commission. |        | Kotclmann.<br>Hamburg. |        | Quetelet.<br>Brussels. |        | Pagliani.<br>Turin. |        | Bowditch.<br>Boston. |        |
|------------------------|--------------------------|--------|-----------------------|--------|-----------------------|--------|------------------------|--------|------------------------|--------|---------------------|--------|----------------------|--------|
|                        | BOYS.                    | GIRLS. | BOYS.                 | GIRLS. | BOYS.                 | GIRLS. | BOYS.                  | GIRLS. | BOYS.                  | GIRLS. | BOYS.               | GIRLS. | BOYS.                | GIRLS. |
| 11-12                  | 140.4                    | 142.8  | 136                   | 137    | 135                   | 133    | 135.06                 | .....  | 132.5                  | 130.1  | 129.4               | 131.5  | 135.4                | 135.7  |
| 12-13                  | 143.7                    | 145.7  | 140                   | 143    | 138                   | 138    | 139.91                 | .....  | 137.5                  | 135.2  | 133.7               | 136.7  | 140.0                | 141.9  |
| 13-14                  | 147.5                    | 150.2  | 144                   | 148    | 143                   | 146    | 143.09                 | .....  | 142.3                  | 140.0  | 139.6               | 142.6  | 145.3                | 147.7  |
| 14-15                  | 153.3                    | 155.3  | 149                   | 153    | 149                   | 151    | 148.88                 | .....  | 146.9                  | 144.6  | 145.4               | 149.6  | 152.1                | 152.3  |
| 15-16                  | 159.6                    | 158.9  | 156                   | 157    | 156                   | 154    | 154.19                 | .....  | 151.3                  | 148.8  | 151.9               | 152.6  | 158.2                | 155.2  |
| 16-17                  | 164.0                    | 158.9  | 162                   | 159    | 164                   | 159    | 161.65                 | .....  | 155.4                  | 152.2  | 158.0               | 154.0  | 165.1                | 156.4  |
| 17-18                  | 169.3                    | 156.0  | 167                   | 160    | 167                   | .....  | 166.90                 | .....  | 159.4                  | 154.6  | 160.0               | 155.0  | 168.0                | 157.2  |
| 18-19                  | 167.0                    | .....  | 170                   | 160    | 170                   | .....  | 168.39                 | .....  | 163.0                  | 156.3  | 160.8               | 155.0  | 169.3                | 157.3  |
| 19-20                  | 169.3                    | .....  | 171                   | 162    | .....                 | .....  | 166.86                 | .....  | 165.5                  | 157.0  | 161.6               | .....  | .....                | .....  |

TABLE II. BODY WEIGHT IN KILOGRAMS.

| Height<br>in<br>Years. | Norwegian<br>Commission. |        | Swedish<br>Committee. |        | Danish<br>Commission. |        | Kotclmann.<br>Hamburg. |        | Quetelet.<br>Brussels. |        | Pagliani.<br>Turin. |        | Bowditch.<br>Boston. |        |
|------------------------|--------------------------|--------|-----------------------|--------|-----------------------|--------|------------------------|--------|------------------------|--------|---------------------|--------|----------------------|--------|
|                        | BOYS.                    | GIRLS. | BOYS.                 | GIRLS. | BOYS.                 | GIRLS. | BOYS.                  | GIRLS. | BOYS.                  | GIRLS. | BOYS.               | GIRLS. | BOYS.                | GIRLS. |
| 11-12                  | 35.3                     | 34.2   | 32.2                  | 31.9   | 31.0                  | 30.5   | 30.75                  | .....  | 27.0                   | 25.5   | 26.6                | 26.9   | 31.84                | 31.23  |
| 12-13                  | 36.0                     | 38.0   | 34.5                  | 35.9   | 33.5                  | 34.0   | 33.94                  | .....  | 29.0                   | 29.0   | 29.3                | 29.5   | 34.84                | 35.53  |
| 13-14                  | 38.5                     | 41.5   | 37.6                  | 39.6   | 36.5                  | 38.0   | 35.80                  | .....  | 33.1                   | 32.5   | 33.0                | 34.5   | 38.49                | 40.21  |
| 14-15                  | 43.5                     | 45.9   | 42.3                  | 44.8   | 40.5                  | 42.0   | 41.01                  | .....  | 37.1                   | 36.3   | 36.6                | 38.5   | 42.95                | 44.65  |
| 15-16                  | 48.5                     | 50.0   | 46.8                  | 48.9   | 46.5                  | 46.5   | 45.95                  | .....  | 41.2                   | 40.0   | 41.8                | 43.8   | 48.59                | 48.12  |
| 16-17                  | 53.7                     | 49.9   | 52.3                  | 51.6   | 53.0                  | 51.0   | 51.93                  | .....  | 45.4                   | 43.5   | 47.2                | 45.7   | 54.90                | 50.81  |
| 17-18                  | 55.1                     | 52.2   | 57.6                  | 54.6   | 57.5                  | .....  | 56.87                  | .....  | 49.7                   | 46.8   | 52.7                | 47.5   | 57.84                | 52.41  |
| 18-19                  | 59.0                     | .....  | 61.3                  | 56.3   | 61.0                  | .....  | 60.36                  | .....  | 53.9                   | 49.8   | 53.8                | 48.6   | 60.13                | 52.24  |
| 19-20                  | 66.3                     | .....  | 63.3                  | 57.4   | .....                 | .....  | 61.85                  | .....  | 57.6                   | 52.1   | 55.0                | .....  | .....                | .....  |

development at corresponding ages, of the different races represented. For example, Bowditch's figures give the normal approximately for American children. The table will be helpful in supplying a standard by means of which it is easy to determine the amount of deviation from the normal in height and weight.

Perhaps the most significant thing to be observed in the reports of the large children—the tall, the heavy, and the stout—is their very general association with older children to escape the undue attention which their size provokes. Quite as general also is the custom of dressing them like their associates. "Was treated according to size and not according to age," "more was expected of me than of others on account of my size," "had to do all the hard and heavy work," etc., are some of the expressions indicating the treatment. The children of this group are therefore made to submit to an unnatural environment, one which certainly has the effect of stimulating to premature development mentally. It seems quite as reasonable to suppose that the apparently greater maturity of large children is due quite as much to their treatment as to any natural cause.

As to general health and mental ability, there appears to be good reason to believe that the larger children—excepting extremes—are superior to others. But it must not be forgotten that there are pathological cases in this group, and that the extremely exceptional ones show a marked tendency to a pathological condition. The fact that such are extremes should be remembered. The tall seem to be more sensitive about their peculiarity than do the stout and heavy, while the stout show more pathological cases. The result of the treatment which this class receives is therefore a too early maturity. While this is the result of effort to escape undue attention, it seems that it is not very likely to result in a morbid sensitiveness. Other qualities found in such children are good nature, evenness of temperament, and popularity with others.

#### SMALL.

1. F. 12 yrs. old.  $3\frac{1}{2}$  ft. tall. Weight 50 pounds. Nervous. Light. Weakly and cannot get around very well. Excited when spoken to. Does not go to school. Treated better than brothers and sisters. Father thin and tall, mother short and stout. Grandfather weighed 100.

2. F.  $18\frac{1}{2}$  yrs. old.  $4\frac{1}{2}$  ft. tall. Weighs 105. Dutch. Light. Phlegmatic. Good-natured. People said to her and brother on street one night: "Say, but your mamma is looking for you." Parents small.

3. F. 22 yrs. old. 2 ft. 2 ins. tall. Looked about 4 years old. Light. Very ugly. Cannot talk. Brothers and sisters nice looking. Mother large and father average size.

4. F. 6 yrs old. Fair. Height of three-year-old brother. Delicate.

Petted more than other children. Does not go to school. Parents large.

5. F. 8 yrs. old. Looks 3. Spiteful. Children of her age at school think her too small to play with them. Ancestors ordinary size.

6. F. 20 yrs. old. 4 ft. 2 ins. tall. Light. Had scarlet fever at 8 and has grown none since. Face looks old. Intelligent. Dresses as a child.

7. F. 7 yrs. 8 mos. old. 2½ ft. tall. Light. Nervous. Size of child of 4. Sent to hospital when a year old, because her eyes "rolled back." Cannot fix her eyes on any special object. Has what appears to be small stumps of sixth fingers on hands just below thumbs. She is bright and can walk and talk as well as any one. Has not lived at home since a year old. Her mother is nervous and cannot bear her. A sister of normal size died at 4. Parents average size.

8. F. 5 yrs. old. Could be put in sister's doll carriage when 3. Was never able to walk, and died at 5. Could say but a few words. Parents large.

9. M. 15 yrs. old. Light. Bilious. Grown but 2 ins. in last two years. Was so small his mother kept him in dresses until he was 9 years old. Every one turns to look at him. Much petted at school. Mother's side of family small as far as can be traced.

10. M. 10 yrs. old. Weighs 43 pounds. 3 ft. 10 ins. tall. Dark. Disagreeable. Has not grown more than one-half inch in last two years. One day when a strong wind was blowing he did not reach school until late, because he had to wait until some one found him and carried him in. Parents large.

11. M. 16 yrs. old. 4 ft. tall. Light. Good disposition. Every one used to make fun of him for his smallness. He would go home and cry and often not come out for two or three days. Used to eat all the time to make himself grow. Parents and grandparents average size.

12. M. 12 yrs. old, weight 65. Very short. Was irritable, and petted at home. Children used to ask him when he was "going to grow," and tell him to "take that brick off his head." Such children should be shown more consideration. Not inherited.

13. M. 34 yrs. old. 3 ft. tall. Shape and size of a 4 year-old. A brother who died at 20 was about the same, excepting a man's head. Parents ordinary size.

The small, for the same reason that large children associate with and are dressed like older children, prefer to be with younger children, and are usually dressed to appear younger. In more than one instance has it been mentioned that young women are dressed like young girls. While of the large more was expected and demanded, with the small the reverse is true. They are treated as children long after they are men and women in years. The treatment of the large, according to size rather than age, led to premature development. Similar treatment of the small leads to the opposite result—delayed development.

The healthier ones of this class show great activity, both of body and mind, but there is a very marked increase in the number of cases showing degeneration. A great many died early, others are "delicate," "could not speak," "were ugly, deformed, or vicious," and still others were "dull, mean, and spiteful." It is at once evident, on the basis of the cases

reported, that the small, as a class, are much more strongly pathological than the large, the notice and treatment which they receive being far more likely to produce morbid tendencies.

#### STRONG.

1. M. 10 years old. Dark. Irritable. Large boys held him in respect for his great strength. Small boys all claim his friendship. Older sister was in subjection, while he was master of the household. Was often punished at school for "picking quarrels." Would suggest use of his strength at work. Paternal grandfather quite strong.

2. M. 12 yrs. old. Could put 25 pound dumb bells over head three times with either hand. Could lift 195 pounds to hips. Had to do heavy work at home. Had respect of other boys. Parents and grandparents strong on both sides.

3. F. 13 yrs. old. Dark. Can move pieces of furniture which her mother and sister together cannot move. Is a favorite at school. Can be traced through four generations on father's side.

4. F. 18 years old. Fair. Nervous. Raised herself on nurse's lap at 2 weeks old. Walked at 7 mos. old, and ran at 10. Arms always very strong. Was the ruler of her set of girls at school. Lifted corner of piano up while her mother put the leg in. Had a severe attack of sciatica at 15, and has not been strong since. Heroine of the school. Grandfather quite strong.

5. F. 14 yrs. old. Can tire out her father in a scuffle, and he is a large, strong man. Girls at school do not dare to have much fun at her expense.

6. F. 12 yrs. old. Saw her carry a young lady across the room. "Shows off" her strength, which has the effect of making her coarse and unrefined. Do not think the trait inherited.

The individuals of this group are frequently the leaders of the children with whom they associate. "Was respected," "All the smaller boys claim his protection," "Is not teased," "Favorite," "Petted and admired and had first choice," "Heroine of school," and "Girls did not dare have much fun at her expense," are some of the expressions which show the nature of the influence. Fighting, harshness, daring, coarseness and roughness seem to characterize, to a degree, this class. They are given more work than others and more is expected of them. They seem to receive more punishments than other children, and punishments do not seem to have the depressing effect that they might on some others. Their wrong doings seem to be the result of an extra supply of energy, and not to be premeditated.

#### BODILY WEAKNESS.

1. M. 12 yrs. old. Pale and irritable. Weak legs and had to wear them in iron braces. Had defect at birth. Walks with crutches. Often falls into fits of crying and passion, for which teacher scolds him. Pupils tease him. Petted at home. Not inherited.

2. F. 5 yrs. old. Spinal weakness. Been troubled so since birth. Has to wear plaster of Paris jacket all the time. If this be taken off she has to lie in just that position on the bed. Not inherited.

3. F. 7 yrs. old. Precocious. Healthy as a baby, but as she grew

older, showed spinal weakness and is now bent almost double. Suffered a great deal but has never complained.

The marks of degeneracy to be observed in a milder form among the birth-marked and ugly, and more pronounced in the deformed, seem to be yet stronger in those having bodily weakness. They are both ugly and deformed in addition to their special defect. Theirs is a pitiable lot. Mental defect is, of course, common. Some are cruel. The infrequency of inheritance, as a cause, suggests the thought that the greater number of such cases are a result of the indiscretions and ignorance of parents—especially during the embryonic period. The weakness is so great in most cases as to prevent going to school, and away from home very often. They are a special care most often, and are kept out of sight occasionally. The temperamental conditions of such children is apparently very bad.

#### DEFT.

1. M. 20 yrs. old. Deft in use of tools, at wood work, and in repairing bits of machinery. At 10 took a Waterbury watch apart and put together again. When any little article was broken he would say: "never mind, I will fix it."

2. M. 10½ yrs. old. Generous and good-natured. Made 175 peach baskets in 9 hrs., which requires an exceedingly deft hand. Encouraged at home and praised by teacher, who receives many tokens of his regard. Pupils look up to him. Father and grandfather deft in the same way.

3. F. 14 yrs. old. Light. Phlegmatic. When 5 was ill with scarlet fever and lost use of lower limbs for a while. During this period she began to fashion doll's clothes and to sew. Learned to crochet and make doll's hats. Made fancy patterns and her own dresses at 13. Did not go to school until 14. Consulted in everything by schoolmates, who thought her wonderful. Always aided in decorating for school entertainments. Through mother and great grandmother.

4. F. 12 yrs. old. Light. Pleasant. Deft with fingers, and crocheted before 5, tidies out of darning cotton. One for grandmother's rocking chair, and one for piano stool. Could play piano well at 6. Made rapid progress under instruction. Neither parent so.

5. F. 8 yrs. old. Skilled in crocheting, was fond of it and could make most difficult patterns. Would take her work to school, but teacher had her stop it and take exercise as other children did. Not inherited.

#### AGILE.

1. F. 5½ yrs. old. Dark. Could dance all the popular dances at 2, and turn somersaults forwards and backwards. Could kick higher than her head. Once 3 ins. above, and people made up a purse and gave her. People often asked to take her to parties and dances to entertain. Much praised. Paternal grandmother agile.

2. M. 12 yrs. old. Runner of school and won in all the races. Would get him to run at recesses just to see him. Made much of and looked up to. Does not seem to be inherited.

3. M. 16 yrs. old. Light. Run faster, jump farther, and play ball better than any of his schoolmates. Could turn hand-spring forward

and backward. Pupils almost worshipped him. Now travels with a show as a contortionist and all-round athlete. Parents not noted for agility.

4. F. 14 yrs. old. Dark. Thought nothing of putting her hands on a fence and vaulting over, dancing clog dances, playing ball, turning somersaults, climbing trees, sliding down banisters, etc. Was thought wonderful at school, especially by girls. Do not think it hereditary.

The notice which children of these groups receive is very generally that of approval and appreciation, and therefore calculated to stimulate. This leads in some instances to "showing off." They are "favored," "petted," "worshipped," "appreciated," "looked up to," "shown more attention," "given more privileges," etc. The agile seem to have the better health, while both appear to be rather undersized. In some cases it seems that the deftness is an acquisition dependent upon some defect—the individual being left no other choice than to follow work which results in such skill. The first are more often generous, popular, and fond of play.

#### CLUMSY.

1. M. Blonde. When small was continually stubbing my toes and falling. Fell down stairs several times. Fell down once going into church. Once before the senior class. Was always laughed at, both at school and home. Grandfather clumsy.

2. F. 14 yrs. old. Light. Sure to fall every time she went out. Fell over the carriage stepping stone one day. Mother had some small ducks and chickens in the yard, and every time K. went out she was sure to kill one by stepping on it. Neither parent so.

3. F. 8 yrs. old. Light. Nervous. Clumsy ever since a baby. If she has anything in her hands she is sure to drop it. Upset everything she touched, and when she was walking looked as if she were sure to fall. Ridiculed at school. Not inherited.

4. F. 5 years old. Falls over things. Takes an age for her to get out of people's ways. Mother calls her clumsy and gave her that name for a while. This made her almost cry. Do not know about inheritance.

But a few cases of this class are reported. It appears from these, however, that clumsiness is of two kinds as to origin. It may be due to excessive inhibition of the accessory movements and therefore be a form of nervousness. Also it may be due to a want of development of the mechanism that functions these accessory movements, which is clumsiness as ordinarily understood. These are subjected to much uncharitable attention.

#### BEAUTY.

1. F. 4 yrs. old. People stopped to admire. Artists wanted to paint her picture, and neighbors borrowed her to show their company. Not inherited.

2. M. 3 yrs. old. People all want to kiss him when his grand

mother takes him to church. People often call to see him. Allowed to do about as he pleases at home. Inherits from father.

3. M. 8 yrs. old. Between 2 and 6, people always noticed and commented on his beauty. Would talk to him and take him up. Teachers and older pupils flattered and petted him. Made him quite vain. Was also large. None other of family especially good looking.

4. F. 15 yrs. old. Fair. Made a great deal of at school and home. Said to her aunt one day: "I don't want to go out walking any more. People stare at me so." Inherited from father. Mother died when girl was 13.

5. F. 9 mos. old. People all look at her. Mother is afraid for any one to touch her, can't find clothes good enough for her, and won't let her cry for a moment. Not inherited.

6. F. English. Every one noticed her. Mother told she ought not to allow her to go out on street alone, as she might be kidnapped. Did not know she was good looking. One of eight children. Parents and grandparents good looking.

7. F. 7 yrs. old. Light. Bright. Conscious of her beauty, and often found admiring herself in the mirror. Favorite at school. Parents died when she was young.

8. F. 9 yrs. old. People on the street turned to look at her. When she started to school, pupils and teacher began to pet her and tell her she was pretty. She grew vain. This was discouraged at home and she is not now so vain. Both parents good looking.

9. F. 15 yrs. old. Dark. Good disposition. Picture was painted and exhibited at the Art Club, where many stood to gaze at it. Teacher had her sit on front seat so she could see her. Imaginative. Not known to be inherited.

10. F. 3 yrs. old. Fair. German. Courageous and inquisitive. Beauty can be traced through three generations.

11. F. 5 yrs. old. Also vain. Once asked her teacher if she did not think her the prettiest child in her class. Said all her folks were handsome, but that she was the most so. Told me one day she was prettier than F. because her eyes were large and brown, while F.'s were small. Was told at home that she was not pretty, but admired at school.

12. F. 6 yrs. old. Blonde. Noticed on the street. Petted and has nicer clothes than the other children. Petted at school. Self-conscious and haughty as a result.

13. F. 7 yrs. old. Received \$100 prize at Columbian Exposition. People told her she was pretty. Mother would tell her to look in mirror every time she put a clean dress on her. Knew she was pretty and was conceited. Her mother and maternal grandmother good looking.

14. F. 4½ yrs. old. Also very orderly and dignified. People all turn to look. Parents try to keep her ignorant of her beauty. Inherited.

15. F. 7 yrs. old. Every one thought her pretty. Allowed to do nearly everything she wanted to at school. Mother and grandmother good looking. Also two sisters.

16. F. 7½ yrs. old. Much noticed. Treated much better than other children. Parents good looking.

17. F. 7 yrs. old. Has always been taken about a great deal. Has everything nice and new, while her little sister wears any old thing and is left out. Entirely too much petted. Family are good looking.

18. M. 7 yrs. old. Light. Mild. When his aunt took him out walking people turned to look at him. Mother dressed him well and gave him more attention than other children. Aunt beautiful.

No other one of the classes studied receives an amount of attention so unusual. In no other class is the evil effect of unusual attention so apparent. In very few instances has it not been the most obvious cause in producing vanity, and its related qualities, as selfishness, unkindness, haughtiness, pride. It is little wonder that beautiful children have these traits and that they like to show themselves, and to have an unusual share of attention as they grow older. It is exactly what they have been educated to expect. They have been "petted," "indulged," "flattered," "better dressed," "always taken out," "given prizes," "given preferences," until the wonderful thing would be that they should have a natural estimate of themselves and of their relations to others. The evil effects of their treatment is no doubt counteracted in some measure by better health than the average child possesses. Perhaps those who are guilty of thus doing such incalculable harm to helpless children, excuse themselves upon the ground that it is out of good will and admiration, but none the less it is a great wrong, and one which common sense would do much to correct.

#### UGLY.

1. F. 13 yrs. old. Sallow. Bilious. Disagreeable. Sisters ashamed of her and do not care to be seen with her. Classmates shun her and call her "little Miss Ugly." Don't think she would be so disagreeable if treated more kindly. Father homely.

2. F. 9 yrs. old. Light. Nervous. Ugliest person ever seen. Looks like a monkey. Peaked face, turned up nose, bulging eyes, and thick lips made to project by her teeth. Petted at home and teased at school. Backward. Mother the same when her age.

3. M. 21 yrs. old. Light. Mild. Small head, large nose, small mouth, chin sloping very rapidly to the neck, and a squeaky voice. Far below average. Tormented exceedingly. Parents small, but not ugly.

4. M. Polish-Danish. Dark. Some are afraid of him. Not known to be inherited. Parents in Europe.

5. M. 12 yrs. old. Looks like a monkey. Every one looks at him. Boys jeer at him and chase him. Parents very indulgent and kind, but seldom take him anywhere. Shunned at school by teacher and pupils. Is so conscious that he will not meet any one if he can help it. Parents and grandparents fine looking, but a great-grandfather uglier than he.

6. F. 10 yrs. old. So ugly that every one turns to look at her. Dark and gloomy. Few children will play with her at school. Mother not quite so ugly.

7. F. 4 yrs. old. Light. Passionate. Small, flat nose. Ugly mouth, always open, showing an ugly set of decayed and broken teeth. Almond-shaped eyes. People rough and cruel to her. Mother homely, and grandfather especially so.

8. F. 9 yrs. old. Light and nervous. Horribly ugly. Looks like a monkey. Makes one shiver to look at her. Cross-eyed, near-sighted, pug-nosed, upper lip long, and projecting teeth; whipped one moment and petted the next. Father good-looking and mother ugly.

9. F. 11 yrs. old. Dark. Disagreeable. Every one noticed her.

Children at school mistreated her and teacher punished her for almost nothing.

10. M. 7 yrs. old. Dark. Obstinate and stubborn. Broad, flat face, low forehead, large, straight mouth and thin lips, with dark, watery eyes. Parents unkind to and dislike him for his ugliness. Either teased or avoided at school. Teacher punishes him for stubbornness and he cries because his feelings are hurt. Inherited.

11. M. 10 yrs. 9 mos. old. Irish. Ugly character. Father divorced from mother for cruel treatment. Mother thinks her children faultless. Seems to be inherited.

That disorders of a fundamental kind are behind an ugly face more often than a comely one, is suggested by reference to the other bodily and mental conditions which are more or less characteristic of this class. There are records of divorces and disreputable parents, of obstinacy, stubbornness, backwardness, gloominess, mental defect, nervousness, etc. That these mental abnormalities might be largely the result of unkind and inconsiderate treatment, and that they might be lessened by right treatment, is probably true, but that there is a predisposing physical basis for them must be admitted. Mere ugliness of face does not imply degeneration, but that it is more often found among those who are degenerating, or who are already degenerating, seems a fair conclusion. The taunts, stares, and indignities in general which the ugly are subjected to, are extremely cruel in many cases. They are shunned, even by brothers and sisters, and left at home by parents occasionally. Indeed they seem, in some instances, to soon prefer the quiet of home life.

#### DEFORMED.

1. M. 14 yrs. old. Dark. Phlegmatic. Born an apparently healthy child, but it was found at 2 that he could not walk. Remained so for two years, when he began to walk without touching heels to floor. Became somewhat stronger, but limbs remained stiff. Strength failed at 13, and now he cannot walk at all. Losing strength in arms. Father humors him, and brothers and sisters have to obey him. Traced for three generations. Brother and sister afflicted the same way. Sister committed suicide at 18. Father has two sisters with same trouble.

2. M. 18 yrs. old. Born without right hand. Pupils used to ask him to do things which they knew he could not do. Had an uncle without left hand.

3. M. 13 yrs. old. Club-foot. Sensitive, and goes among older persons because the boys torment him. Has a brother of 11 with similar deformity. No other such case ever known in the family.

4. M. 14 yrs. old. Dark. Good-natured. Had a hand like a turtle's claw, and was called "snapping turtle John" at school. Always carried hand in pocket. Not known to be inherited.

5. M. 11 yrs. old. Light. Hunchback, caused by an injury when 3. Small, only  $3\frac{1}{2}$  ft. tall. Pupils at school sometimes call him "old man" and "granddaddy," but he takes it good naturedly.

6. M. 9 yrs. old. Club-foot. Played with other children but the foot would soon get tired, and he would have to stop. Regarded with awe by other children. Not considered hereditary.

7. M. 7 yrs. old. Short leg from birth. Thin, bright and active. Uses good language. Very mischievous and always teasing other children. Much spoiled on account of his deformity.

8. F. 10 yrs. old. Light. Nervous. One foot shorter than other. Mother always complaining about the trouble her sickness causes. Brothers and sisters impose on her. Allowed extra privileges at school.

9. F. Born with only one leg, and this remained about a foot and a half in length, though the foot was normal size. Head, arms, and body grew all right. Was very strong in arms. Was in a perfect agony if she saw any one or anything suffering. She fully appreciated her disability.

10. F. 11 yrs. old. Born with left hand off at elbow. Petted at home and much liked at school. Very generous, and choice about her food. Likes sweetmeats. Not inherited.

11. F. 7 yrs. old. Right ear is simply a roll of cartilage about one inch long and no opening. Bright. Has never gone to school on account of deafness and fear of being teased. Nothing like it in family.

The hard lot and degenerative tendencies of the ugly are seen in a much more pronounced form in these. It is strongly suggested that the deformity is but the sign of a rapidly degenerating stock, although this is not a necessary inference in each case. Some of those reported are of extra-uterine origin. They are very commonly afflicted with nervous disorders, are delicate and small, and have speech, mental and sense defects. They are sensitive, timid, despondent, and sometimes spiteful. They are frequently sympathetic and generous.

There are five that are the only children in families, and one is the youngest child. (<sup>1</sup> Duncan has observed that the first, and last born, are much more liable to be defective, both mentally and physically, than are others.)

Again, 37 of the 62 of this group are boys, or about three-fifths, while two-thirds of the 1,045 cases are girls. Thus boys appear to be much more liable to deformity than do girls. It was at first supposed that perhaps this might be due to the easier observation of deformities in boys on account of their manner of dress, but this seems to have little basis in fact.

Warner found in his studies of London School Children that 8.27% of the physical anomalies belonged to boys, while 6.78% belonged to girls. This is in harmony with the common observation that woman is the more conservative of the two sexes. This phase of heredity will be considered in relation to boys and girls, in another place. An observation of Newsholme<sup>2</sup> is suggestive in this connection. He says: "The males outnumber females in still-births, probably owing to the greater difficulty in birth. Thus in the ten years 1865-1875, there

<sup>1</sup> "Sterility in Women." Duncan. pp. 66 and 67.

<sup>2</sup> Vital Statistics. p. 61. Newsholme.

were in France, 144; Italy, 140; Belgium, 135; Sweden, 133, and in Prussia 129, to every 100 female still-births." It seems reasonable to suppose then, that not only deformities incident to difficulty in delivery, but those which may be due to intra-uterine disturbances are much more likely to occur with boys than girls.

It should be observed that 7 of these are of non-American parentage.

The record of their treatment is saddening, and leads one to think that deformity in others is a source of pleasure to many at all times, and perhaps to all at some times. They are "ridiculed," "stared at," "shunned," "regarded with awe," "left at home by parents," and very frequently do not go to school, and prefer to stay at home in order to escape the unkind notice which they receive elsewhere. Probably very few people appreciate in any right sense the sufferings of this class of unfortunates as a result of the cruel stares and remarks of others. It is not at all strange that they are lonely, strange, despondent, melancholy, and refuse to "go out."

Yet there is good reason to assume that, in cases which are not so much a result of bodily disorder of a too general and fundamental character defects have served as stimuli. Perhaps every person could name an example of such out of his personal acquaintances. Byron, Pope, Aristotle, and many others might be named as striking illustrations that all the world knows more or less about. Obversely, there are no doubt few who have not known some individuals so unconscious of pains or defects, so completely and overwhelmingly satisfied with the mere pleasure of existence, that life has had no serious meaning for them.

#### BIRTHMARKS.

1. M. 13 yrs. old. Irish. One whole side of face, from forehead to chin, a fiery red. People frequently stop him and ask if he has burned his face. Not inherited.

2. M. 4 yrs. 9 mos. old. Light. When 9 mos. old his mother let him fall against a hot stove, burning left hand and left side of his face, so that he now has a very noticeable scar. The third and fourth fingers are much shorter and thicker than the others, and he carries them in such a position as to prevent them from being seen.

3. F. 19 yrs old. On left hand and arm a continuous red blotch, so conspicuous that she usually wears the hand gloved. Always caused comment among pupils.

4. F. 6 yrs. old. Light. A very decided red spot on her left hand. She found that by rubbing it, it might be made to disappear for an instant, and will sit rubbing it by the hour. Neither parents nor grandparents have any such scar.

5. F. 12 yrs. old. Dark. A sheet of fiery red skin covers one side of her face. She always thinks of it when in company, and says she does not like to go anywhere on account of it. Not inherited.

6. F. 12 yrs. old. Dark. Nervous and sensitive. Brownish red

mark on right cheek which looks like a scar from a scald or burn, extends over whole cheek. Often spoken to about it and laughed at at school. Not inherited.

7. F. 10 yrs. old. One side of face a bright red, and the other a perfect white. Attracts attention wherever she goes. Do not know about the heredity.

8. F. 14 yrs. old. Has a small triangular piece out of lobe of the right ear. Subject is a sore one to her. Brothers, boy-like, used to tease her by saying the angels-liked her so well that they held on to her fast enough to rip a piece out of her ear. Not inherited.

9. F. 12 yrs. old. A large, red mark, on the cheek under the eye. Her family never mention it to her, as she is very sensitive about it. Some of her schoolmates who notice it for the first time, mention it to her, but never ridicule. She is also a whining child. Not inherited.

10. F. 14 yrs. old. Born with a small lump over right eye. This grew until now it is as large as a hen's egg. Until 12 could use the eye by lifting up the lump. Was a great favorite at home. At school, strange children used to stare at her a great deal, which pained her very much. Not inherited.

11. F. 14 yrs. old. Mark on back of neck. One of the brightest, finest girls in school. Girls used to make remarks which she overheard, and though she would not say anything about it, one could see was very much pained. Does not go out in company on this account. Not inherited.

The signs of degeneration are not nearly so marked in this as in the two preceding groups, viz., deformed and ugly, but they are nevertheless not wanting. Speech defect is reported in four instances, while bad health, deformity, and ugliness, are noted in others. They are sensitive, whining, morbid, despondent. The behavior of others toward them is of the same character as that toward the two classes above named, and tends to produce similar results. That it should not do so in so pronounced degree may be owing to their better average health.

#### SENSE KEENNESS AND MENTAL PRECOCITY.

1. F. 16 yrs. old. Keen sight. Ever since a little child able to see long distances. Called needle eyes by friends. Father's home on a peninsula. Aunts could look across to opposite shore, a long distance, and distinguish persons. Inherited from father for four generations.

2. F. 3 yrs. old. Dark and nervous. Keen sense of smell. Could tell kind of food cooking, flowers in next room, or if one had been eating candy. People tested her wherever she went.

3. M. 4 yrs. old. Fair. Sense of smell keen. Can detect odors that others fail to notice. Could smell onions in the house where they had been cooked day before. All laugh at him at home. Mother's sense of smell good.

4. M. 4 yrs. old. Light. Plump and rosy. Very bright. Good memory. Knows a great deal. Can sing sweetly. Very inquisitive. Subject of his inquiries is often God. Affectionate. Pride of family.

5. M. 7 yrs. old. Nervous. Eng.-Scotch-Irish. Fair. Precocious and beautiful. Ear for music and sang from time he talked. Very neat and orderly. Somewhat stubborn and inclined to tease. Not selfish, but sober and thoughtful. Active but not boisterous, which may be due to the continuous companionship that has existed between him and his grandmother from his infancy. He is a little "old man."

Mother is a careless, thoughtless woman, and has left care of boy to her mother, who is educated and refined.

The amount and character of the attention which the children of this group receive, is no doubt responsible for much that is peculiar in them, but there is reason for assuming that this is by no means the important factor. While unusual development is reported in not a few cases along some lines, there is ground for the inference that more of the cases are abnormal, if not pathological, than otherwise. These children are often vain and self-important. Quiet surroundings, rather than such as stimulate, seem better for them.

#### SENSE, MENTAL AND SPEECH DEFECT.

1. F. 13 yrs. old. Fair. Slow in reading and writing. Strong and healthy. Good disposition. Can do any kind of house work. Has been sent to school many times, but the teacher would always send her home with note saying she could not learn anything. Has a bright, kind face. Parents are intelligent.

2. M. 10 yrs. old. Light. Poor hearing. Often fights with the boys because he thinks they are talking about him. School children plague and annoy him. Not inherited.

3. M. 30 yrs. old. Dark. Mentally dull. Can work the most difficult problems of mathematics and is well acquainted with sciences. On the other hand, does not know enough to put his hat on, comb his hair or even to eat. Has to have some one look after him all the time. Is the son of a professor. Not inherited.

4. F. 14 yrs. old. Speech defect. Delicate, as a child, and has never been able to speak more distinctly than a child of 2. Is obstinate and will sit for a whole day wherever she may happen to be placed. Eats heartily, but meals have to be taken to her. Seldom speaks to any one. Will tear her clothes in strips and acts as if insane. Sent to school but learned nothing. Father sometimes whips her, which seems to be the cause of her stubbornness. Family healthy.

5. M. 10 yrs. old. American. Florid. Inclined to be phlegmatic. Poor hearing. When he came to school at 7 years of age, was next to impossible to understand him. Has had the school room drill in phonics and can make the vowel sounds, having improved greatly. Can now usually pronounce a word by sounding it. Inclined to leave out unimportant words in speaking. Mumbles some sort of jargon when not ready to answer a question. Reads badly. Has learned to watch people's lips and gets familiar commands and remarks in that way. Is popular among his playmates. Face babyish though bright. Have tried to have him place vocal organs so as to make sounds which he cannot hear well enough to understand. Father a butcher and boy probably eats much meat. Mother cannot hear well.

The peculiar defects in this group are very often significant of general decline. The individuals seem to prefer, in many cases, and are usually allowed, the seclusion of home life. Many are entirely dependent. All would be better off if provided with special instruction, and most are in imperative need of it. The public school as now conducted is hardly the place for such.

## NERVOUS.

1. F. 14 yrs. old. Dark. American. Also sensitive and sympathetic. Least excitement causes great confusion. Harsh words affect her deeply. In after life these traits will affect her in at least three ways. She is so nervous that she will never be strong and healthy, so sensitive that she will never have self-confidence sufficient to make her way, while the two combined will make her impulsive and lead her to do many rash things. Teacher does not seem to understand her. Kept from excitement and never found fault with at home. Would treat such persons with firm kindness and insist on having anything begun completed. Caused by physical condition of mother before birth of child.

2. F. 13 yrs. old. Light. American. Learned readily when she could apply herself. Slightest noise would cause her to jump, and often to scream. A vivid imagination and a disposition to overstatement. Once in telling the teacher about a quarrel between two boys she said they tried to kill each other with knives. Did not seem to mean to misrepresent, but to believe what she said. Severely punished at home, where her surroundings were bad. Parents drunkards. Mother especially violent.

3. M. 10 yrs. old. Light. American. Cannot sit still at school. Especially noticeable in arithmetic. If he fails in his problem the first time he cannot try it a second. Seems to lose all self control at times. Although he can give recitations when alone, it is well nigh impossible for him to do so before the school. Has been severely punished in school for not keeping still. Should be kept from excitement.

These are characterized in the main by delicate and unstable constitutions. They are below, rather than above, the average in size, inclining to be slim; are timid, sensitive, changeable, and sometimes said to be untruthful. They are disposed to be irritable and annoying, and show a sort of inquisitiveness, bordering upon meddlesomeness. The apparent disregard of truth, and the manifestation of a meddlesome spirit, is perhaps due to the want of self-control. The actions of such persons lead others to make sport at their expense, so that association with others, as in the ordinary school life, church and Sunday School, and participation in public exercise of any sort, has the effect of stimulating the trouble. Much of the pleasure which some seem to derive from their behavior toward such individuals is downright cruelty—is entirely too serious for comedy.

## CLEAN.

1. M. 6 yrs. old. When quite small, if his apron became soiled he cried until it was changed. Hands and face gave similar trouble. As he grew older the trait was intensified in a spirit of painful neatness. By actual observation he was once known to stand 20 minutes before the mirror brushing his hair. If any one placed a hand on his head, he at once went to the mirror and began to brush his hair. Delicate health and was taught at home. Through father and father's mother.

2. F. 18 yrs. old. Nervous. When small would cry, if clothing was soiled, until it was changed. Favorite play was "wash day" or "cleaning house." Never could go past a pump or wash basin without

washing my hands. Dirt makes me nervous. Know it is silly, but "cleanliness is next to godliness." Mother a dirt fiend.

3. M. 6 yrs. old. Orderly and quite nervous. If his hands were dirty would cry until they were washed. Clothing must be absolutely clean. His mother could not wear clothing the least bit soiled, for he would scream until she changed it. Did not go to school. Mother much less so than he.

4. F. 5 yrs. old. Light. Could not endure sight of dirt. Wanted a clean dress on if there was least speck on her clothing. Would not play and get dirty as other children. Sits quietly and plays with her dolls. When her little sister came in dirty from making mud pies, she would drag her to the wash basin and scrub her face with soap and towel until it fairly shone, then comb her hair and get a clean apron for her. Parents and grandparents exceedingly neat.

5. F. 2½ yrs. old. Can't pass basin of water without washing hands and face. Gets a cloth, soap, and water, and washes furniture. Will not use a napkin the least bit soiled, and spoons have to be washed about every time she puts them in her mouth. Parents normal.

#### DAINTY.

1. F. 4 yrs. old. Everything must be just so. At meals her mother has to get just what she wants. Once saw her refuse a cup of cocoa. When she saw others had it she fussed until she had some. Has whatever she wants. Neither parent so.

2. M. 9 yrs. old. Light. Nervous. Won't eat vegetables or meat unless made to. Won't eat any kind of pie but pumpkin or any kind of cake but chocolate, and says he can't get enough of these. Likes fruit, and wishes we could get nothing but fruit to eat. Sometimes will eat only bread and sugar. Is often scolded or punished for his daintiness and cries, then gets what he wants. Is pale and thin. No other of family so.

3. F. 17 yrs. old. Dark. Nervous. Used to be so particular about eating that would not go away from home for meals. Would eat only those things that were cooked just so. If they did not look as usual would not touch them. Always had to have my milk strained, so there could not possibly be a speck in it. Family never bothered much with me. If they had prepared what I wanted, I ate with them, if not, I did not do so. Think treatment right. Neither parent so.

4. F. 5 yrs. old. Irish. Delicate and sensitive. Very neat and orderly, especially about dress and work. Does not join readily in games, but stands aloof in a sort of critical attitude. Is very clean. Slow and has good memory. One of a very large, poor family, and has had to take care of the baby.

The associated peculiarities most often met with in the clean are orderliness, obedience, truthfulness, slowness, nervousness, fussiness, daintiness, and a critical spirit. They are not unfrequently delicate children, and are often beautiful. Also, there are several who are said to be quiet and dignified. They are very generally encouraged in the trait, but are restrained in extreme manifestations of it, while they are laughed at and made much sport of by some. In more than one case there is evidence that the peculiarity has become morbid, as when a child washes his hands every few minutes, or refuses to join in any games for fear of soiling his shoes, hands, or clothing.

Indeed the suggestion comes to one in looking over the records, that there is a pathological basis for many of the cases.

The dainty agree in the main with the clean as to temperament and health, though they are more often said to be delicate, feeble, and unhealthy. They are fussy, particular, spoiled, fastidious, nervous, complaining, and are pretty generally indulged in their moods and whims.

#### DIRTY.

1. M. 5 yrs. old. Never seems so happy as when in dirt. Will lie down and roll in it. Eat dirty grass, pretending to be a horse. Walks in muddy road with shoes on. Seems astonished on being told he is dirty. Would occupy him with clean plays and get him some clean, white sand. Do not know that it is hereditary.

2. M. 6 yrs. old. Dark. Happy when dirty. Sit down in dirt and cover himself with it completely. Cry if water is brought near him. Teacher washed his hands one day. He cried, and at recess went out in the street and smeared himself with dirt. Clothing always dirty, and hair never combed. Mother not a very clean woman.

3. M. 6 years old. Also disobedient and untruthful. Never clean. Never told truth or obeyed. Parents or teachers could do nothing with him, though he had been punished in every conceivable way. Sent to Reform School.

4. M. 5 yrs. old. Always objects to being "cleaned up." When he finishes making mud pies, wipes his hands on clothing. Once after being dressed, went out where the donkey was kept and smeared himself with filth, and came back in great delight. Should be whipped. Inherited from mother.

5. M. 2 yrs. and 7 mos. old. Never seems contented unless clothing and face are thick with dirt. As soon as "dressed up" will go out and jump head first into a dirt heap. Will cry and scream when the dirt is washed off. Is quiet. Mother dresses him and tells him how much better he looks than dirty boys. Not inherited.

Some children seem to have a love for dirt and filth in no way developed by surroundings. As for instance when a little child, whose parents and associates are noted for cleanliness, jumps into a dirt heap or a mud puddle, the moment he has had a bath, and a clean dress put on. Or, as when another, with similar training, blackens his face with coal dust, and seems satisfied. Perhaps other instincts of a more primitive form of life refuse to be overcome. Certainly there are many evidences of health and vitality in them, although they are disorderly and disobedient. Eleven of them are non-American.

#### ORDERLY.

1. F. 19 yrs. old. Fair. Had a great craze for order when a child. After playing, always put my playthings in order as before. If playing with neighbor girls, always went around and gathered up things before a new game, or when through. If we had company, and anything was disarranged, it worried me dreadfully and I could not rest until it was properly placed again.

2. F. 5 yrs. old. Dark. Worried if anything is out of place. As soon as she gets up in the morning she visits all the rooms to see if

anything is out of order. If she finds anything she cannot rearrange, she wants her mother to come at once and attend to it. While visiting there, if I left my bureau disordered, I always found it had been straightened up by A. on my return. At night her toys are put carefully away and her dolls tucked away in their cribs. She says nothing when on her ordering expeditions, but hums the same little tune all the time. Her mother orderly.

3. M. 6 yrs. old. Light. Nervous. Every toy, book, etc., in his play-room in its proper place. One would suppose he never used them. Would not allow his brother to use any of his playthings unless he promised beforehand to return it to its proper place. Not hereditary.

4. F. 6 yrs. old. American. Pretty and graceful. Earnest and thoughtful. Quite bright in her studies. Nervous, and a slight stammering in speech. Is conscientious, and desires her work to be inspected in order that she may know if it is right. Makes rapid progress in her work.

#### OBEDIENT.

1. M. 10 yrs. old. Light. Attractive. Not strong. Has eye trouble and wears glasses. Dreads to think he may do wrong, and never does what he is told not to do. Once cutting pictures from paper on Sunday, when he remembered it was Sunday, it required the combined efforts of his mother and grandmother to have him continue. Truthful. Good parentage.

2. F. 7 yrs. old. Light. Nervous. German. If her mother tells her the weather is unfit for her to play out at school, no amount of coaxing can induce her to go out. Never hesitated in her obedience, even though she disliked it so much that she cried. Great care should be taken that only just commands be given such a child. From both parents.

3. F. 3 yrs. old. Light. Once had a little friend visiting her who wanted everything she saw. F.'s mother told her to let her have them, which she did willingly. Is orderly, and always puts away her playthings as soon as through with them. Mother orderly.

4. F. 3 yrs. old. Most obedient child ever saw. Every one notices it in her. Once, when the grass was wet between our houses, her mother told her to go around by the board walk. Ever after that she would come round that way. Do not know about heredity.

The orderly and obedient might both be described almost equally well by either term. The first are clean, slow, patient, punctual, sometimes nervous, and truthful. The second seem to be, in addition, timid. Both are encouraged by parents and teachers and seem to be favorites generally. The orderly are inclined to give annoyance by their exacting methods. It seems to be true that obedience very often springs from timidity and weakness.

#### DISOBEDIENT.

1. M. 10 yrs. old. When told to do a thing, will do the exact opposite. If told not to do it, will usually do it. If his mother tells him not to go skating, he will surely go.

2. M. 6 yrs. old. Also dirty and a liar. Teacher can do nothing with him, and parents but little, although they have punished him in every conceivable way. Was finally sent to Reform School.

3. F. 7 yrs. old. Beautiful and praised a great deal on this account,

which makes her disobedient. Will do nothing she is told to do. Never corrected. Mother the same make up.

4. F. 2½ yrs. old. Also dishonest. Broke a doll one day, and mother asked her who did it. "Why, John did it," she said. Would always do opposite of what she was told, if possible. Was told one day not to follow her grandmother, not to leave the door. In a few moments she was a distance up the street.

#### DISORDERLY.

1. M. 21 yrs. old. American. Dark. Sanguine. Always tearing his books or breaking something about him. Began book-keeping, but blotted his paper so badly that he had to quit. In returning chairs from hall to church he broke and scarred a number. Worked in a quarry, but his carelessness soon resulted in his discharge. Likewise in a rubber factory. He is of more than usual ability, and from a well-behaved and gentlemanly boy, has degenerated into a coarse, profane tough. Was punished and scolded at home. Made to do work over at school. Mother somewhat so.

2. M. 10 yrs. old. Dark. Had bad temper. Had no idea of order. When playing with blocks, could never get them in order unless I watched some one else. Playthings and books always left where last used. Could never find anything when wanted. Frequently punished and corrected for it, but did no good. Lasted until was about 14. Not inherited.

3. F. 17 yrs. old. Fair. Sanguine. When a growing child was very disorderly. Clothing always torn, ripped, or buttonless. Was constantly admonished to do better, but only slowly overcame the trait in a partial degree. Was kept in at school and made to put desk in order before leaving.

Disorder and disobedience are closely related. There seems to be more than usual energy behind both, especially the disobedient, who are occasionally mentioned as beautiful. They receive various kinds of punishment, as scolding, whipping, expulsion from schools, being sent to reform schools, etc. Very often they are dirty, untruthful, destructive, boisterous, of violent tempers, and disagreeable generally. Their treatment, as a rule, appears not only not to improve them, but to aggravate.

#### TEASING.

1. M. 12 yrs., old. Dark. Phlegmatic. Continually teasing younger children. Delighted when he could get dead snakes or live wasps with which to chase children. Had numerous devices for this purpose. Has been punished in various ways. Do not know about inheritance.

2. M. 4 yrs. old. Took the lemon squeezer out and put a kitten in it. When kitten mewed he laughed. Was left at home one day with his grandmother, who could not walk. He is not allowed to visit the sugar box, so he said; "Grandma, I am going to get some sugar, I am. Look, grandma, I am going. Here I go! I've got some, two handfuls!" Teased his 14 mos. old sister by taking her playthings. Will take things from other children and when they cry, he laughs. Has had many kinds of punishment.

3. M. 14 yrs. old. Never more delighted than when teasing some one. If could not find a person to tease would tease dogs, cats, or any

animal. Did not do so because others disliked it, but because it came natural for him.

4. M. 12 yrs old. Teases every one and everything with which he comes in contact. Cannot pass a dog or cat on the street without throwing or kicking at them. Think no notice should be given him when he does these things.

#### BUOYANT.

1. F. 4½ yrs. old. Light. Generous. If things do not please her she does not show it. If her playmates are not nice she tries to make them so by her example. If she displeases others accidentally she tries to turn it off. Has always been loved by all on account of her pleasing ways. Has always been discriminated against at home because she was so easily satisfied. Paternal ancestors so, but maternal irritable.

2. F. 10 yrs. old. Always happy, never sad. Never knew her to be disappointed or unhappy. If she had planned to go somewhere and it rained, she did not care. She could do something else. If she broke her doll she could have another. Not inherited.

3. M. 7 yrs. old. Has red hair, which is his greatest delight. Good-natured, always happy. Never see a scowl on his face. Almost overjoyed when allowed to drive a horse, and will talk of it for weeks. Other children are always glad to play with him because he is so generous in sharing his playthings. Always running and jumping. Can't keep still. Always first on playground. Every one else may be gloomy, but he is smiling and happy. Not inherited.

4. F. 6 yrs. old. American. Fair. Small and rather delicate. Cheerful and makes others so. Sometime inclined to tease. Inclined to be careless with her work and slow to take up anything new. Sociable and fond of companionship. Teacher never passes her desk but E. pulls her dress or touches her hand to get her attention, when she tells some little joke and nods her head in a very wise little way.

Buoyancy and teasing are alike in that both seem to originate in an abundance of vitality. Children of the former class have more of the characteristics of generosity and sympathy, while those of the latter are often cruel or nearly so, although very generally liked.

#### BUFFOONS.

1. M. 8 yrs. old. Dark. Mischievous and dirty. Does all sorts of things to create merriment. Nothing pleases him better than to be laughed at. Children at school encourage him. Seems to be ruining him. From father.

2. F. 14 yrs. old. Dark. Did all sorts of things to make us laugh. Was the clown at school. Rolled her eyeballs so as to show only the whites, stuck pins in her fingers, arranged her hair in some curious fashion, looked cross-eyed, stretched her mouth in funny shapes, moved her ears, and said all kinds of amusing things. Much admired at school. Not inherited.

3. M. 13 yrs. old. Always doing something in school to cause the children to laugh. Tore the window sill with his teeth and hurt himself in such an attempt. If kept in to write words and some of them happened to be long, he would write some short word, as cat, to see the teacher laugh, although he were kept twice as long.

4. M. 6 yrs. old. Light. Cheerful. Will put things on his head or ears and walk about in some ridiculous fashion simply to see

people laugh. School children laugh at him and this encourages him. Is usually not noticed at home. Mother lively.

The buffoons are likewise characterized by an exuberance of spirits. They are healthy, dirty, generous in a way, and easy-going. The attention which they win from others is generally that of approval, and appears to satisfy a desire for applause or commendation. The grimaces and unnatural gestures perhaps satisfy an interest in the morbid which is akin to that shown in the deformed and ugly.

#### CRUEL.

1. M. 16 yrs. old. 5 ft. 4 ins. tall. Irish-Swede. Stiff brown hair growing down over forehead, which is narrow and rapidly retreating. Small face, always wearing a dogged, sullen look. When quite young would smash dishes or anything about him, if angry. Once when left at home tied a stone about neck of mother's cat and threw it in the river. About 8 he took mother's molasses jug and poured contents all over carpet of sitting room. Nothing could be done with him at school. Loaded a stick with powder and put it in the schoolroom stove unobserved. Blew out sides of the stove. Was expelled from school. Later tried to drown younger brother. Now at Reform School. Mother used most brutal punishment. Once saw her spank her 10 mos. old baby because it would not sit in its chair while she did her work. Father a hard-working, industrious mechanic.

2. Ms. 8 and 9 years old. Dark. American. Strong and healthy, but make little or no progress in books. Heard their father say that two pups, about one week old, needed to be killed. When he was away they took them to a block and with an axe cut off the head of one, cut another open lengthwise, and a third crosswise, through the stomach. Are allowed to visit the slaughter houses. Not corrected often, but severely, as father does it when drinking. The trait can be traced two generations through him.

3. M. 10 yrs. old. Continually torturing birds by picking out their eyes. His cat had four kittens which his mother wished to do away with. He partially drowned them and then put them into a hole and chopped them into small pieces with a spade. Not inherited.

4. M. 9 yrs. old. Bilious. Mopish, sly, and underhanded. When he was about 5, saw him stick a pin in a fly and watched its agonies as it walked away. Has cut off cats' tails inch by inch, cut off the toes of chickens, put out the eyes of birds, cut off the legs of frogs and broken bills of chickens. Cruel to younger children at school, and was expelled. Was pleaded with and whipped, but did no good. Finally sent to Reform School. Father was a butcher, but not cruel. Nothing else like it in family.

5. F. 6 yrs. old. Picked up a little chicken and wrung off its head, then broke its legs. Delights to be "mother," when playing with children, so she can beat them. Reprimanded at home for it. Father a drunkard.

6. F. 6 yrs. old. Swede-Irish. Delights to see cruelty done. Once got out among some small chickens and was making short work of them; when stopped, she was very angry and wanted to go back and kill the remainder of the "little birds." Punishes dogs and cats in any way she can. Father has been in a state's prison and lunatic asylum. Mother a rough character and much disliked by neighbors.

Cruelty appears to originate in the exercise of power over

weaker living things. More is shown toward children than grown persons, more to small and young animals, and perhaps relatively most to insects. Teasing is an allied trait. The presence of physical and mental defects might suggest a savage sort of revenge against all living things as the cause in some instances. Some of the cases are clearly the result of seeing the slaughter of animals. Perhaps some are the direct result of punishment, for there is a record of physical punishment in most cases, and in not a few of a brutal sort.

It is well to note that of the 22 cases, 7 are of foreign parentage, four of these being children by intermarriage between different nationalities. One a French-English, one French-Indian, and two Swede-Irish. The presence of such pronounced cruelty in very young children, as is mentioned in some of the reports, would lead one to infer that it is the result of remote ancestral influence. Many, if not all of the children described, are unfit for association with others.

#### SELFISH.

1. M. 11 yrs. old. Light. Would never divide with his playmates or take his turn at being "it" in "hide-and-go-seek," but always ready for gain. Very much disliked on this account by other boys. Seems to be inherited from parents and grandfather.

2. F. 9½ yrs. old. Nervous. Her mother told her one day, when she had some candy, to give her friends a part. She would not, and said they could get some from somebody else. She is a great talker, very inquisitive, and much spoiled.

3. F. 13 yrs. old. Light. Most selfish and gluttonous child ever seen. At table she always insists on having just what she wants, and before any one else. Several times when she had candy given her, she ran up stairs and hid it where none but herself could find it. Parents never correct her. Not inherited.

4. F. 10 yrs. old. Fair. Extremely disagreeable. Seems to think of no one but herself. Always wants the best and largest share of goodies. Would cheat in playing with other children, rather than let another win. Never gave her playmates anything. Would do nothing she thought might please any one else. Always thought people should do whatever she asked them, and at once. Did not make many friends. Inherited from father.

5. F. 3 yrs. old. Will not let other children have her playthings or taste her cakes and candies. Whenever her parents go out she must go also, no matter what is said. Everything she does shows selfishness. Parents never think of correcting her. Is not inherited.

The selfish are often mentioned among the cruel. They are sometimes gluttonous, loquacious, untruthful, spoiled or indulged. They often cheat to satisfy selfish desires. They do not join so actively in the plays of others, nor are they very much liked by other children. Selfishness is one of the most striking traits of the only children in families. While it is no doubt stimulated by surroundings, in many cases, there is abundant evidence that health has quite as much to do with it.

## GENEROUS.

1. M. 15 yrs. old. Has many bad traits. Had \$10 with which to buy himself toys at Christmas. As he started into the store he met two ragged boys and gave them his money, going home without the toys. Favorite with other boys. Parents are generous.

2. M. 5½ yrs. old. Saw a little girl crying for money to buy a doll with. Told her to stop, went in the house and got some money from his bank and gave her. Gave his mother's wrap to a poor lady. Imposed on on account of his generosity. Liked by every one. Called "Genny George." Can be traced three generations back.

3. F. 5 yrs. old. Light. Active. So generous that she often tries my temper. Would insist on giving me things whether I wanted them or not. Never dare to let her wear anything valuable away from home, for she one day gave away her gold chain and diamond locket. Punished for her extreme manifestations of it. Father generous.

4. F. 11 yrs. old. Dark. When playing, is the first to give up her toys to those who want them. Earned \$5 one summer, and gave it to her mother to buy something for her, her father and brother, but said nothing about herself. Has more consideration than other children. Parents generous.

5. F. 15 yrs. old. American. Light and good looking. Good health and inclined to be fleshy. Always laughing and merry. Gives one a restful feeling to be in her presence. Willing to work, and assumes household cares in mother's absence, although she has two older sisters, who impose on her because of her good nature. Will lend any of her possessions. Somewhat careless, and a good humored tease. Did not worry much at being reproved. From mother.

## SYMPATHY.

1. F. 17 yrs. old. One day brought a snake into the house to warm. Her brother was going to kill it, but she cried so hard that he did not do it. Always picking up bugs and such things, to keep them from being hurt. From father.

2. F. 9 yrs. old. Light. Nervous. Sensitive. Her sympathy is almost physical. If you say you have a headache, she immediately has one also. If you are sad or merry, she is the same. If she sees tears, she will cry. She easily detects illness in your face, and straightway is ill herself. Illness of others kept from her as much as possible at home. Taken advantage of at school. Do not know about inheritance.

3. F. 19 yrs. old. Could not bear to see animals suffer. Nearly broke my heart. Easier to see persons suffer, for they can tell of their troubles. Once saw a blind organ grinder who stood on the street corner from day to day, holding a little dog in his arms in a cramped position. Watched it for awhile and burst into tears, never thinking of the man's infirmity or affliction. Mother so.

4. F. 10 yrs. old. Light. Could not bear to see any one suffer or scolded. Would cry harder than those she saw punished. Once when her sister was slightly reprimanded at school, she cried until almost hysterical. Was laughed at and called "cry baby." From mother and her father.

5. M. 17 yrs. old. Strong sympathy for animals. If I saw anything suffering, I seemed to experience the same suffering. Once father sold a cow to butcher. Cried so hard, had to be told she would come back.

Generosity and sympathy are nearly always found in the

same individual. The first named appears to be the active side of the latter. It is faintly suggested that delicate and impaired constitutions are especially predisposed to be generous and sympathetic. Both classes are very general favorites, and their company is much sought after by other children, who easily and frequently impose on them. These feelings are quite as often manifested toward animals as toward human beings. It is very strongly suggested by some of the cases that sympathy is developed in not a few persons by some painful defect.

#### IMAGINATION.

1. M. 8 yrs. old. Ambitious. Will talk for hours about his farm out west. Every cow, horse, or pig he sees is compared with those on his farm. Would say: "I would not have such horses on my farm in Minneshota." Would tell how his agent, "John Bat," had shipped a car load of animals east, and he was expecting them every day. If asked why they had not arrived, would say "John" had come east and sold them. Wrote many letters to him concerning the care of the farm. One day he called to a stranger driving by: "Stop a minute, John!" When told not to do so, he said: "I know who that is; it is my man John Bat." Not inherited.

2. M. 7 yrs. old. Dark. Happy. Said one day: "My papa is making cider and lets me drink it when first made, before it gets sour." His father was at the time ill in bed and never had made any cider. He said also another time: "Once when I was a baby I walked down to grandma's all by myself, and I could talk to her, too, and nobody taught me how." His grandmother lives in a town 5 miles away. Parents try to prevent his saying such things. Not inherited.

3. M. 20 yrs. old. When a little boy used to take horse-chestnuts, and calling them cows and chickens, would play with them for hours. Had an imaginary companion with me all the time. Before doing anything always asked this companion and gave answer myself. Talked aloud all the time. Parents unimaginative.

4. F. 2 yrs. old. Playing alone said: "You curl my hair, I'll curl yours." Then in a few minutes: "I curled your hair nice, but you didn't curl mine nice." Asks questions, and answers them in a changed voice. Playmates like her. Not inherited.

Imaginativeness characterizes many of the "only child" group and others who, for any reason, have not had companions of their own age. Such children resort to imaginary companionship. Burnt matches, horse chestnuts, dolls, or changed tone of voice serve to supply the companions. Not a few seem to indulge the power out of a desire for an enlarged personality, and become deceivers, if not liars.

#### LYING.

1. M. 6 yrs. old. Thinks a great deal of animals and guns. His father bought him a toy gun when he was about 4. He went out to a creek near the house, and when he came in, told his mother he had killed a rabbit out in the creek. Upon being told he must not tell such dreadful things, he replied: "Well, I saw something in the creek that looked like rabbits. I think they were rocks." Inherited from father.

2. F. 7 yrs. old. Seemed a second nature. Lied when the truth would have answered better. Seems to prefer the lie. Was punished both at home and in school, and finally broken of the habit.

3. F. 7 yrs. old. Light. Everything she tells is a lie. Nobody believes anything she tells. If she hears any one tell anything, she tells something like it. Punished, but does not seem to do any good. Neither parent so.

4. M. 10 yrs. old. American. Light. Tells his stories as if they were facts. Tender-hearted and conscience stricken when talked to about it. Have known him to take money several times, and once to take 10 cents from his teacher, who suspected him and induced him to confess. Teacher has stopped him through fear of punishment, but he still lies to the boys away from school. Traced to parents.

5. F. 7 yrs. old. Think it due to ignorance. Told the girls there was a snake down in the wheat field and that it ate all the wheat off. When she talks so at school the girls say: "Now E. come off. Don't tell us so many of those fairy tales. We have heard enough of them." Not inherited.

Lying seems to be nearly related to imaginativeness. Also it no doubt comes in some instances from a lack of self-command and self-assertion, while in perhaps the greater number of cases it is a result of imitation and a sort of personal interest. Its connection with, and dependence upon, the imagination in early life is quite evident. It seems to be a sort of exercise for the rapidly enlarging personality. Disorder, disobedience, bad temper, stealing, and bad health are other associated traits.

#### ILL-TEMPERED.

1. F. 10 yrs. old. Fair. Been so from a baby. Would scream until noticed and taken up. When crossed she would throw herself on the floor and scream and kick for minutes at a time. Whipped frequently. Finally found that the best thing to do was to leave her alone in these spells until she gets over them alone. Much improved.

2. F. 10½ yrs. old. Screams and fights. Scarcely a day without some show of it. Father teased her to have her show her "spunk." Boys teased her at school. Father and mother are quick, but never lose control.

3. M. 16 yrs. old. Ever since babyhood has had fits of gloom and ill-temper, usually occurring about time of each full moon. Violent at such times. When quite young would beat his head on the floor in anger, and even now he seems to lose entire control of himself, venting his anger on friend and foe alike. His mother says that as he grows older these spontaneous outbreaks are less frequent and violent. At other times he is well disposed. Last August, at usual time, he was sullen and troublesome, any communication with others invariably ending in a quarrel. I asked him what the trouble was. He said he was angry with every one. When these attacks make their appearance he is left alone. Do not consider it hereditary.

4. F. 5 yrs. old. American. Pretty. Fair. Delicate and has taken a good deal of medicine. Once, when calling with mother, threw a glass tumbler through a window in a fit of passion. When sick would dash away medicine in a fury. Once, when visiting, said in emphatic tone there was nothing on table she wanted. Tyrant of home and indulged. Mother often says: "Why, L—, mamma is so sorry. Can't she do something for you?" etc., and gets in return,

"Shut your mouth." Two brothers like her. Mother fussy and over-particular. When the girl entered school she proved to be bright and, contrary to expectation, showed a better disposition.

Peevishness, untruthfulness, discontent, nervousness, delicate health, so common in this group, suggest a sort of constitutional instability, a want of proper balance and self-control, as the basis of bad tempers. It is not necessary to infer the absence of energy and vitality, but it seems right to suppose a bad combination. The ordinary school and social life of children appears to stimulate the trait, and it is strongly suggested that a quiet, even, sympathetic, though firm and uniform mode of treatment, is best.

#### SILENT.

1. F. 13 yrs. old. Sallow. Bilious. Never spoke unless questioned. Would sit for hours thus. Would play with other children and let them do all the talking. Allowed to remain silent at home and not troubled at play to any great extent. Such children should be questioned more, given more self-confidence, as it is often these who have really interesting thoughts.

2. F. 10 yrs. old. Light. Never played very much and usually preferred to be with older persons. When they talked she would keep very quiet and listen. Mother often urged her to go out and play with other children. If she had been allowed to go more with other children when younger, think she would not be so quiet. Inherited to a degree.

3. F. 7 yrs. old. Bashful and dignified. Seldom talks, especially when among strangers.

4. M. 9 yrs. old. Loves to sit by himself and talk to no one. Speaks only when spoken to. When his brother, who is the very opposite, goes out to play, G. remains in the house. Never soils his clothing. Has a sister about 4 years old who seems to have rheumatism in one of her feet and cannot walk.

5. F. 3 yrs. old. When we played together I did all the talking. Sometimes she would leave her expensive playthings and play with burnt matches for hours. Sometimes sit down in a cosy corner and remain quiet for hours. What she did say was unusual. Seemed to live within herself. As she grows older, talks more and seems to regret her quiet way. Always allowed to talk when she chose. A general favorite. Father a quiet man.

#### DIGNIFIED.

1. F. 7 yrs. old. Looks like a little woman as she walks along the street. Does not seem to play with other children. Enjoys company of older children.

2. F. 5 yrs. old. Fair. Phlegmatic. Does not care to play with other children, does not care for their games, and will not romp. Will play in a dignified way with dolls and toys. Will come into the parlor and shake hands with her mother's callers and talk to them in a womanly way. No one thinks of treating her as other children. Parents pet her and think trait an excellent one. Such dignity is unnatural, and she should be taught to romp and play as other children do. Not inherited.

3. M. 14 yrs. old. Light. Phlegmatic. Never mingles with school children. Sat in seat and read during recesses. Conversation was that

of a man of 25. Preferred company of older people. Teacher one day asked him if he would take drawing. He replied: "I have no talent in that direction and prefer devoting myself to reading." Carried himself erect on the street, and always lifted his hat deferentially to elders. Carried a cane everywhere but to school. Shoes always polished and clean. When a book of children's stories was given him he said: "Do they think I am a boy? Just as if I wanted to read such nonsense. I would much rather have had Stanley's in Darkest Africa?" Father died when he was four, and mother always called him her "little man." Was the only son and always accompanied his mother and sisters when they went out. Children look up to him at school. Strange to say, is not conceited and is obedient.

The silent and dignified are allied groups. The terms might be interchanged and be equally expressive. The silent are usually considered as dignified, and the dignified are usually silent. They are also equally likely to be clean, neat, orderly, obedient, particular, timid. Indeed it seems that timidity is very frequently assumed to be dignity. The general condition is not far from pathological, and it appears that both traits are very likely to have such an origin. The dignified, especially, are subjected to a good deal of teasing, but receive a good deal of petting and encouragement at home. Both kinds prefer the company of older persons, and thus, like the large, are sure to grow old in ways prematurely. It is unfortunate that this trait should receive the encouragement of older persons. They will not engage in lively games, involving running, scrambling, or loud talking.

#### FRANK.

1. F. 17 yrs. old. Dark. Cannot keep a secret. If the girls asked me to keep a secret, I would say: "Yes, but I must tell mamma." I would tell her and everybody else's mamma before I knew it. Hurts me to keep a secret yet. Seems like a burden on me and I don't feel relieved until I have told some one. If it is good I want some one to share it. If bad I want some one to console with. Am never told anything at home except what all should know, which is perhaps right, although it sometimes hurts. Mother can't keep a secret.

2. F. 3 yrs. old. Fair. Once while at her grandmother's, her aunt had a gentleman caller. On this, as on other occasions, H. found her way into the parlor in spite of efforts to prevent, and was soon seated on the gentleman's lap. He asked her how long she was going to remain at her grandmother's. She said that her grandmother was making her a black petticoat and that as soon as that was finished she was going home. Once on being asked if she were not a nice little girl, she replied: "Yes, I am acting like a perfect little lady, cause mamma told me to." Do not know that it is inherited.

#### LOQUACIOUS.

1. 12½ years old. Dark. German. Talks to any one who will listen, and when he has no listeners, talks to himself. Is bright, and says he wants to learn Latin, Greek and German, and become professor of elocution in some college. Regarded as an annoyance by teachers, who give him no attention unless compelled to do so. Pupils regard him as a brainless chatterbox. Parents pet him and consider his talking a mark of high intelligence.

2. F. 4 yrs. old. Fair. Good disposition. Talked continually. Would talk to any one near, and if no one was about, she would get her doll and talk to that, or perhaps a cat, or a picture, and if not to them, then to herself. She often sits by the window, watching the passers-by, and talks to them, although there is no possibility of their hearing her. Neither parent unusually talkative.

3. M. 5 yrs. old. Light. Talks all the time. When playing alone talks to himself as though he had some one with him. Offered him 10 cents once to stop talking 5 minutes, but he could not do it. Teased about it. Mother a great talker.

4. F. 7 yrs. old. Also witty. Told everything she knew to any who would listen. She simply must tell all she knew. One of her mother's friends brought a piece of goods to be made into a dress for the child, saying it was left from her wrapper. L. was cautioned not to tell this. On wearing this dress for the first time, she told her mother that some little girls had admired it very much. When her mother asked her if she had told about the wrapper, she replied, with downcast eyes: "I tell everything I know, don't I?" Father same way.

#### INQUISITIVE.

1. M. 12 yrs. old. Dark. Bright. Mania to find out how things were made, and he was constantly tearing things to pieces and peering into everything with a cover. When he hears any one talking he will at once listen and then begin to question. Something of a sneak in his manner of prying into things. Once looked over a medicine chest, and to satisfy himself, tasted of the contents of all the bottles. Do not know that it is inherited.

2. F. 10 yrs. old. Fair. Asks all manner of questions. These usually relate to the person to whom she is talking. She said: "Aint those nice shoes? How much did you pay for them? I ask a good many questions, don't I?" Does not wait for her questions to be answered. Whines also.

3. F. 8 yrs. old. Light. Nervous. Was continually asking questions about what she saw, wherever she went. Her object seemed to be merely to pry into things. Do not know that she inherits it.

4. M. 7 yrs. old. Light. American. Asked a great many questions and wanted to look on the inside of everything. Would sit on the floor for a long time, watching the clock. Some one told him there was a little iron man inside it. One day when his mother was out he took down the clock and was fast making his way into the home of the little iron man. Parents have always tried to answer his questions. They are fine, educated people.

The frank, loquacious, and inquisitive seem to agree in the matter of defective self-control and want of power of inhibition. Weakness rather than strength is suggested in that respect at least. The frank tend to become tattlers, while the loquacious are often nervous, restless, conceited, forward, spoiled, and anxious to be noticed. The inquisitive are too often merely curious.

#### COURAGE.

1. M. Light. Never afraid of anything. Thoughtful and careful. When four years old went with his father and some neighbors to rescue a cow from the mire. About 11 o'clock at night he grew tired and started home. There were no houses along the way, which was, for

quite a distance, a causeway with water on both sides, and led over a bridge, and by some woods. A neighbor tried to have him stop at his house, but he would not. Was never frightened by stories and the like. From mother.

2. F. 6 yrs. old. German. Dark. Happy. Not afraid of anything. Will go into any place at any time of night. Once bitten quite severely by a savage dog. Next day she slipped out of the house and began to torment the same dog. Not hereditary.

3. F. 8 yrs. old. Norwegian. Will go to bed in any room, no matter how dark. Her mother never allowed her to be told any ghost stories or to hear of hell, hence she knows of no fear.

4. F. 4 yrs. old. Fair. Fiery temper. Courage and timidity. Has no fear of animals, such as cows, horses, and dogs. Will walk between their legs. Not afraid of thunder or darkness. Yet from babyhood would be thrown into a fit of screaming by a feather, or any rasping noise—as a toy squeaker. Cannot be overcome by examination, of course, as she won't go near the object. Normal in other respects. Additional age and reason needed to cure it.

The courageous are usually healthy and strong, both mentally and physically. They are very often quiet and reserved in disposition, as well as obedient and generous. They are natural leaders and therefore respected. In two cases it is stated that ghost, or other such, stories were never told them.

#### TIMID.

1. M. 5 yrs. old. Fair. Nervous. Exceptionally timid until 3. Was afraid to stay on the porch while mother was in the house, or in a room alone while mother was in an adjoining room. Afraid of strangers and various animals. Parents carefully guarded against his being left alone and frightened in any way, and he gradually overcame his timidity. Caused by nervousness brought on from measles.

2. M. 6 yrs. old. American. Light. Very bright and well formed. Afraid of toads. If he, while playing in the yard, happens to see one, seems unable to move and cries for his mother. Although quite a large boy now, he is still afraid of them. Do not know what gave him this fear and mother says she does not. She has used it to make him come in the house.

3. F. Scotch-Irish. Not afraid of thunder or lightning, nor of any animal except the horse. Always afraid of strangers, especially men and boys. When she started to school she went with her older sister and did as she did. Finally she got well enough acquainted to do very well, but whenever strangers came in she would run to her sister. Recites much better alone than in the class. Things that call her into notice are the hardest for her. Do not know about the cause.

Timidity evidently has a physical basis. It is doubtless true that it can be induced by surroundings, and such cases are reported, but environment produces its effect much more readily on those who are physically predisposed. Signs of this predisposition are nervousness, weakness, and bad health generally. There are cases of survival from ancestral influences. Very often the fear has been made use of to secure the enforcement of commands, a practice as dangerous as it is savage and cruel.

WHINING.

1. F. 7 yrs. old. Was a delicate, thin child and always whining. Said she did not have as nice playthings as other children and was always treated worse than others. Once when she and her little cousin were at her grandmother's she imagined that she did not receive the proper attention and said: "I am going to cry, grandma," and burst out in a sob. She kept on in a mournful whine until shown all the attention. Treated better than brothers and sisters.

A very limited number of these are mentioned, and but one that is typical. From these, one would infer bad health as a cause. In one case the statement is made that the peculiarity is due to conduct of mother before birth. One is the youngest child. Petting is perhaps common at home. They are not favorites with others.

SPOILED.

1. M. 14 yrs. old. Has a bright face and always receives marked attention from strangers. Teachers and others were always quoting his bright sayings. As he grew older he began to shirk his work and grew indolent. Seems to have no ambition. Seems to be father's pet, and brothers and sisters have to do his work. Exact counterpart of his ambitionless father.

2. M. 8 yrs. old. Entirely spoiled. Will not go to school unless he has such and such a thing. Will not play unless his sister plays with him. Has to be coaxed to do everything. Petted very much.

3. M. 7 years old. Has so many toys that they now have no charm for him. Must have a thing the moment he asks for it. If he says his little sister is or is not to do a thing, she must or must not. Aim of his parents is to gratify his every wish. Neither of them so.

The spoiled are the "only child" in six instances, the "only boy" in one instance, and the "only girl" in one. Thus, aside from the influences which may lead to spoiling after birth, there seems to be a cause at work before birth. They are beautiful, selfish, grumbling, lazy. All are humored and indulged to some extent, while most are to a degree that is suggestive of great ignorance of parents as to sensible treatment of children. They do not get along well with other children and prefer not to be with them. The aversion seems to be mutual.

GLUTTONOUS.

1. M. 3 yrs. old. Never has enough. Will eat as long as there is anything to be had. Father is large, and a large eater, so the boy probably inherits.

2. M. 10 yrs. old. Dark. Would always eat something of everything on the table. Eats very fast, swallowing his food almost whole, yet is the first one to the table and the last to leave it, if possible. Can't place anything before him which he does not like. He seems to be hungry all the time and will be asking for more inside of an hour after meal times. Seems unable to control his appetite. Sometimes eats so much that he can hardly walk. Unlike most big eaters he is thin. Would give him a fixed amount for each meal. Brothers and sisters sometimes tease him. Not inherited.

3. M. 5 yrs. old. Light. Good disposition. When he came to the table would use both hands, and shovel the food in, as it were. Could not be made to use a knife and fork. Seemed he could not get enough. Was a source of amusement, and laughed at at school.

4. F. 1½ yrs. old. Light. Irritable. Eats more than any other child of this age ever seen. Eats everything a grown person would eat. Is not contented with a full stomach. Eats until uncomfortable. Saw her eat two dishes of apple sauce, oysters, crackers, milk, and cry for cheese and bananas. Was finally satisfied with candy. She is stuffed with nearly everything and the doctor often has to be called in as a result. Parents and grandparents so.

The reports for this group are too few to afford suggestions of any special value. However, it does appear that the gluttonous are likely to be subjects for pathological consideration—that good health is not characteristic. Evidently if disturbed health does not cause gluttony, disorder often results from it.

#### ONLY CHILD IN A FAMILY

1. F. 16 yrs. old. Light. Sober. Only child until 6. Spoiled. My mother often says I was born with a "golden spoon in my mouth" and, as I was the first child, nothing was too good for me. Had the largest room in the house and that literally packed with toys. Everything I wished for was granted. Papa would bring people home to see me almost every night and even had my picture printed on his bank checks. In a short time I became thoroughly spoiled and was tired of books, toys, games, and every childish amusement. If I did not get my own way I would cry, kick, and scratch my nurse. Then my parents began to realize they had indulged me too much. We moved later to L. to live with my mother's friend who had two daughters. I was compelled to share all my things with them. About this time my sister was born and I gradually grew out of my selfish, spoiled ways. Think later treatment right. My association with the two little girls, and the birth of my little sister, with whom I had to share, cured me. Did not go to school.

2. F. 9 yrs. old. Dignified. Was an old-fashioned kind of girl. If you had talked to her as to others of her age she would have been insulted. Would come into our house, sit down, and talk like some little old woman. Never cared to play with children of her own age, and, if she could not find older girls to play with, she would visit the children's mothers rather than play with younger ones. Seems to have been due to being with older persons. Had spinal trouble when young, was a cripple for awhile and not allowed to play with others for fear of being hurt. Hence did not care for children when older. She was petted a great deal at home and treated as if a great deal older. Disagreeable to an extent and wanted her own way. Did not go to school.

3. F. 14 yrs. old. Nervous. cannot sit still. Jerks most pitifully when you look at her. Muscles of her face twitch so badly that her face is thereby distorted. Cannot sit still long enough to do anything like sewing, playing on piano, etc. Parents let her have her own way, as she gets worse if they do not. Pupils all notice her affliction.

4. F. 3 yrs. old. Fair. Good. Imaginative. Would play with imaginary children and have imaginary tea parties and games. Had imaginary everything. One day as some of her imaginary friends were supposed to be coming in at the door some one knocked. She

cried, "O mamma! they have come! they have come!" Not allowed to play away from home or with other children. Not inherited.

5. M. 10 yrs. old. Dark. Not good. Selfish. When playing wants all the best things and the most prominent place. Never thinks of giving anything up unless made to do so. At home has and does nearly everything he chooses. Not a general favorite at school. No heredity.

6. M. 10 yrs. old. Light. Selfish, spoiled, and ill-natured. Is so selfish that children of his own age will not play with him. Always wants his own way and plays with children much younger than himself. Very ugly to them unless they allow him his own way in everything. Children at school will very seldom play with him. Is delicate. Father's mother not selfish.

46 of the 1045 cases are explicitly stated to be of this class, while there are a number of others that obviously are. Thus one out of twenty of the entire number is an "only child;" a number entirely out of proportion to that found among children generally. "The only child in a family" is therefore very likely to "be peculiar and exceptional."

The general character of these peculiarities is suggested when it is stated that two-thirds of these children belong to the group having disadvantageous traits. 12 are said to have bad health and 4 are said to have good health, while it appears from other information that at least three-fourths are below the average in health. In fact it would seem that bad health is the rule among such. It appears, also, that the parents, one or both, are below the standard in vitality, and perhaps that sterility begins early with them.

Of those who are of school age 9 do not go to school, while 7 are reported as going. It is therefore probable that quite a large per centage of such children do not go to school at all and that the remainder, for the most part, attend very irregularly. They do not seem to get along well with other children, in the greater number of instances, because they do not understand each other. The "only child" is deficient on the social side. To help himself, however, he commonly resorts to imaginary companions. The devices which they employ to help out in this matter are various and interesting, and suggest somewhat as to the strength of the social instinct.

The greater number of them are "petted," "indulged," "humored," "spoiled," etc. Still there are some exceptions to all the more striking peculiarities here mentioned. There are five respects in which they are different from the ordinary child. They have imaginary companions, do not go to school regularly, if at all, do not get along with other children well, as a rule, are generally spoiled by indulgence, and have bad health in most cases. But as this subject is to constitute a later and separate study, for which a part of the material is already

at hand and more in course of preparation, it is best not to pursue it further here.

It ought to be mentioned that the "youngest child," the "only boy" and the "only girl" display many striking resemblances to this class, and that quite a number of them are found in the list. They, together with "twins," are to be included in the forthcoming study above mentioned.

It is scarcely possible to collect as large a number of reports as is here represented, any considerable number of which shall be much more than general observations of individuals. A different result was not expected, however desirable it might have been. Yet there have been received a few so comprehensive and admirable in every way, that it was impossible, as it would have been unjust, to subject them to much condensation. One of these is presented below as suggestive of what would constitute wellnigh complete reports. Another, still more complete, will be presented in connection with the "Only Child" study.

F. 35 yrs old. American. Blonde. Nervous. Left eye weak from third year. Unable to keep lid open in bright light. Left side did not develop uniformly in size with the right. Though agile for short periods, strength soon gave out and play with others was therefore not enjoyable.

Had remarkable memory for events or dates. This was inherited from father. Was disorderly with own property. Truthful. Disobedient when inclinations clashed with orders. Exceedingly sympathetic. Considered selfish by other children, always to my surprise. Always wanted to use authority instead of acting. Later years have shown that spinal and heart disease must have been latent, and, as nearly as the early feelings can now be analyzed, did not feel able to compete with others in games requiring physical strength and thought it a disgrace to admit illness as the cause. Naturally frank and talkative, but could keep a secret if necessary. Very hopeful when well but other extreme when ill. (Maternal grandfather was a visionary of the most pronounced sort, always planning and beginning things, but never finishing. He tried to invent various things.) Ideals never reached.

Dainty, investigative, exceedingly critical, and restless, but persevering and dogged in a thing attempted. Fond of puzzles. Not imaginative in usual sense. Did not care for poetry. Tried composition once or twice but was discouraged by ridicule of older persons. Have always felt the whole weight of anything with which connected, to the extent of appearing officious to those who do not understand the cause. Mother, whose mother was an invalid for many years previous to her death, took the entire care of a baby brother, who was born minus the palate, and very delicate, when she was a few months past eleven years of age. At twelve she assumed, with slight aid, the care of three older children, in addition to the baby, providing most of their food and clothing. Have been trained by her to have a great sense of responsibility.

From my fourth year I knew that I was to try to teach. Most of my studying was done at home. Mother said: "You must understand this," whatever the subject, "thoroughly, or you cannot teach it." Do not recall that ever heard or read anything of an interesting or useful nature without thinking of the use which I might make of it

in teaching. Teaching has been the one passion of my life, except during my seventeenth and eighteenth years, when I hoped to study medicine, but I do not recall much disappointment from being convinced that my physical disabilities would prevent me from making the attempt. Never gave up the study entirely, for saw it could be made useful in teaching.

Did not care for many friends, but was extremely loyal to those for whom I did care. Although conscious of their failings, never allowed myself to admit them to others, or others to name them to me.

If my sister was punished I fought for her until mother had to punish me too. Was saucy to mother (not often intentionally, for was with older people so much that I did not realize the difference), but would have wanted to kill any one out of family who was so to her.

Dislike was cumulative, and a long series of injuries was often unnoticed, but finally some worthless affair would seem to precipitate all and the friendship was at an end.

Was always a good judge of character where preconceived notions did not interfere.

Mother's marriage was unfortunate, my father having been a spoiled child, and given to all forms of dissipation. When I was four or five years old my mother's brothers took us away from him. I somehow felt there was something disgraceful about him, and when other children asked me where he was, I ran away and hid without answering them. I stayed and cried until they tired of waiting for me. This I never told my mother, or any one until recently. After I was twenty years old I fainted several times at the unexpected sight of an intoxicated man. After beginning teaching, and when the teaching of temperance in the schools came up, I fainted several times in teachers' meetings in spite of all efforts at control. Have succeeded in gaining control in that respect now.

My mother was intensely sensitive and introspective, and my being with her so much and so little with others, has caused me to be like her. Had a morbid sense of responsibility, and expected that people were going to be very careful of *some* of my feelings. At eleven went to boarding school, as my health was too delicate to run the risk of ordinary school exposure. Suffered intensely from physical illness and the mistreatment of other pupils. My reserve on the play-ground was attributed to my pride in my scholarship, which was merely a matter of memory and custom, not to my illness, of which I was ashamed, or to the fact that I avoided intimacy with other children lest they should ask me about my father. When I was ten we moved to a place where my mother's relatives lived. Of course people asked about him. I used to say I did not remember him, and then, from sheer nervousness, cry. That usually stopped questions, and, during my eleventh and twelfth years, while at school, I profited by such methods.

Arithmetic was hard for me, and we had poor teaching. I formed the habit of dreaming out the problems. An uncle, my mother's brother, did the same thing, but I do not know whether he did it deliberately, as I did, or not. When twenty, and again when twenty-five, I more than once dreamed the solution to algebraic and geometric problems and got up in my sleep and wrote them out as neatly as if I had been awake, finding them so next morning. It is almost impossible to let things alone which I have once undertaken, though to this day the ones who think they know me best insist that it is for the sake of having my own way. I know that it is not. Am the same for disagreeable tasks as well as for those I like. If I dislike certain work I compel myself to master it, till the manner of doing is a pleasure in

itself. Until within a few years I could work through almost any amount of physical pain. The more pain I felt, the more I would laugh and joke. Physical endurance is a characteristic of both families I know little in detail of my father's family. He was a very hard drinker, but rarely became unsteady. Was phenomenal in that respect. At the age of 22 I had a tooth extracted and swooned. The physician and dentist could not revive me for some time, though they both told me they gave me eight ounces of strong brandy. I then walked home. My sister, two and a half years older, cannot take a tablespoonful without affecting her head, nor can my mother. It is very difficult to put me under influence of gas, ether or chloroform, and equally hard to revive me after it has been done. I am not apt to be nauseated, though the heart action is weak. Have frequently been given large quantities of brandy and whiskey by physicians to break up chills, and to aid in recovery from attacks of angina pectoris, or succeeding hemorrhages. Every one notices the amount I can take without perceptible effect. Some have suggested that it may be the result of direct heredity, but I have never found anything in my reading to confirm my opinions. It was the *first* dose that was noticed. No remedy seems to have the normal effect on me. It is peculiar to me alone in the family.

Was extremely quick tempered, and downright ugly when aroused. Mother's paternal grandmother and aunt were considered ugly in temper. The grandmother's health and the aunt's husband may have accounted for their dispositions in later life.

My mother's method of governing me was to tell me that I was like some one whom I thoroughly disliked, when she considered me naughty, and to hold up people whom she considered models, as patterns. I deem it a poor method. Children are quick to discover flaws in such weak methods, and I know that I lost all confidence in her judgment.

#### STATISTICAL ANALYSIS.

The types have been divided into three groups (see tables III and IV), on the basis of the worth to the individual, of the various peculiarities. They are the *advantageous*, the *neutral*, and the *disadvantageous*. In the first are found the tall, the heavy, the stout, the strong, the agile, the deft, the beautiful, the clean, the generous, the sympathetic, the buoyant, the orderly, the obedient, the courageous, and those having keen sense powers. They represent 427 children, of whom 270, or .629, inherit the peculiarity, 45, or .104, do not, and 112, or .265, are not accounted for.

In the second are the buffoons, the frank, the loquacious, the imaginative, the inquisitive, the dignified, the teasers, the silent, and the dainty. Of the 126 of these there are 57, or .456, who inherit, 23, or .176, who do not, and 46, or .368, who are not reported.

In the third belong the dirty, the ill-tempered, the small, the timid, the whining, the disorderly, the disobedient, the cruel, the gluttonous, the selfish, those with sense defects, those having bodily weakness, the ugly, the nervous, the deformed, the spoiled, the birth-marked, the liars, and the clumsy.

There are 448 of these; 126 of them, or .281, inherit, 206, or .457, do not, and 116, or .33, are not accounted for.

The greatest amount of inheritance, .629, is found in the first group, the next greatest, .456, in the second, and the smallest amount, .281, in the third. The three groups show a descending scale of inheritance, beginning with the advantageous, passing to the neutral, and ending with the disadvantageous, there being a difference of .347 between the .628 of the first group and the .281 of the third.

It is proper to add at this point that this part of the study was undertaken with the expectation that one of the conclusions arrived at would be the greater connection between disadvantageous traits and inheritance. That a radically different conclusion has been arrived at can, therefore, hardly be in any degree ascribed to a prejudice in its favor.

The general validity of the percentages in Table III, may be objected to, however, on the ground that mental traits are included along with physical, and that it is impossible to tell with much certainty what is due to inheritance, and what to environment. It is generally recognized and admitted that mental diseases of parents show a marked tendency to appear in the same form in offspring, following the law of similarity. This element of uncertainty is easily eliminated by omitting the mental peculiarities from groups 1 and 3 of Table IV, and retaining only such as are fundamental and physical.<sup>1</sup> The first group, as thus limited, includes the tall, the strong, the stout, the heavy, the agile, the beautiful and those with keen senses. The third, so limited, includes those with sense defects, the ugly, the nervous, the deformed, the birth-marked and the small. (These two new divisions constitute groups 4 and 5 of Table IV.) In the fourth there are 261, of whom 174, or .666, inherit, 24, or .091, do not, and 63, or .241, are unaccounted for. The fifth contains 260, and of these 64, or .246, inherit, while 137, or .526, do not, and 59, or .226, are not accounted for. Thus we have an increase in the first group, as thus modified to eliminate the confusing element, of .033, while in the third group, as so modified, we have a decrease of .04.

The great part which imitation plays in fixing of mental traits renders it unsafe to offer any data for conclusions as to the transmissibility of mental qualities.

The data for determining the relative degrees of influence of each parent is more satisfactory. In some cases, however, the parent through whom the trait was acquired has not been mentioned. In others the peculiarity is said to have come from an uncle, an aunt, or a grandparent, but no information is given

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<sup>1</sup> See Table IV, groups 4 and 5

TABLE III.

|                                   | Inherited. |       |      | From Father. |       |      | From Mother. |       |      | From both Parents. |       |      | Not Inherited. |       |      | No Information. |       |      | Total of each type of child. |
|-----------------------------------|------------|-------|------|--------------|-------|------|--------------|-------|------|--------------------|-------|------|----------------|-------|------|-----------------|-------|------|------------------------------|
|                                   | Boys       | Girls | Both | Boys         | Girls | Both | Boys         | Girls | Both | Boys               | Girls | Both | Boys           | Girls | Both | Boys            | Girls | Both |                              |
| Tall .....                        | 7          | 12    | 19   | 1            | 2     | 3    | 3            | 1     | 4    | 2                  | 5     | 7    | ....           | ....  | .... | ....            | 1     | 1    | 20                           |
| Heavy .....                       | 13         | 37    | 50   | 5            | 10    | 15   | 6            | 17    | 23   | 2                  | 7     | 9    | ....           | 4     | 4    | 6               | 18    | 24   | 78                           |
| Stout .....                       | 3          | 4     | 7    | 1            | 2     | 3    | ....         | 2     | 2    | 2                  | ....  | 2    | ....           | 1     | 1    | 2               | ....  | 2    | 10                           |
| Strong .....                      | 6          | 4     | 10   | 2            | 3     | 5    | ....         | 1     | 1    | 3                  | ....  | 3    | ....           | 2     | 2    | 5               | 3     | 8    | 20                           |
| Agile .....                       | 10         | 5     | 15   | 2            | 3     | 5    | ....         | 2     | 2    | 4                  | ....  | 4    | ....           | ....  | 1    | 5               | 2     | 7    | 23                           |
| Deft .....                        | 4          | 1     | 5    | 2            | ....  | 2    | 1            | 1     | 2    | ....               | ....  | .... | ....           | ....  | .... | ....            | ....  | .... | 12                           |
| Keen Senses and Mental Precocity. | 5          | 5     | 10   | 2            | 2     | 4    | 4            | ....  | 4    | ....               | ....  | .... | ....           | ....  | .... | ....            | ....  | .... | 22                           |
| Beauty .....                      | 10         | 42    | 52   | 5            | 8     | 13   | 3            | 18    | 21   | 1                  | 7     | 8    | ....           | 1     | 3    | 4               | 4     | 8    | 75                           |
| Clean .....                       | 10         | 30    | 40   | 2            | 7     | 9    | 4            | 14    | 18   | 4                  | 8     | 12   | ....           | ....  | 10   | 9               | 10    | 13   | 56                           |
| Generous .....                    | 5          | 6     | 11   | 1            | 2     | 3    | 1            | 1     | 2    | 3                  | 3     | 6    | ....           | ....  | 3    | 3               | 2     | 4    | 20                           |
| Sympathetic .....                 | 8          | 12    | 20   | ....         | 3     | 3    | 5            | 6     | 11   | 3                  | 3     | 6    | ....           | ....  | .... | 4               | 9     | 13   | 33                           |
| Buoyant .....                     | 2          | 3     | 5    | 2            | 2     | 4    | ....         | ....  | .... | ....               | ....  | .... | ....           | ....  | .... | ....            | ....  | .... | 10                           |
| Courageous .....                  | 4          | 2     | 6    | 2            | ....  | 2    | 1            | 1     | 2    | 1                  | ....  | 1    | ....           | ....  | .... | 1               | 1     | 2    | 18                           |
| Orderly .....                     | 4          | 12    | 16   | 1            | 2     | 3    | 1            | 6     | 7    | 2                  | 5     | 7    | ....           | ....  | .... | 3               | 4     | 7    | 23                           |
| Obedient .....                    | ....       | 4     | 4    | ....         | 1     | 1    | ....         | 1     | 1    | ....               | 2     | 2    | ....           | ....  | .... | 1               | 2     | 3    | 7                            |
| Total .....                       | 91         | 179   | 270  | 28           | 47    | 75   | 29           | 71    | 100  | 27                 | 41    | 68   | 11             | 34    | 45   | 49              | 63    | 112  | 427                          |
| Buffoons .....                    | 4          | 1     | 5    | 3            | ....  | 3    | 1            | ....  | 1    | ....               | ....  | .... | ....           | 1     | 1    | 5               | ....  | 5    | 11                           |
| Frank .....                       | 2          | 4     | 6    | ....         | ....  | .... | 2            | ....  | 2    | 2                  | ....  | 2    | ....           | ....  | .... | 2               | 1     | 3    | 9                            |
| Loquacious .....                  | 6          | 7     | 13   | 2            | 5     | 7    | 5            | ....  | 5    | ....               | ....  | .... | ....           | ....  | .... | 4               | 6     | 10   | 23                           |
| Inquisitive .....                 | 4          | 5     | 9    | 1            | 1     | 2    | ....         | 4     | 4    | 2                  | ....  | 2    | ....           | ....  | .... | 4               | 3     | 7    | 21                           |
| Dignified .....                   | 2          | 4     | 6    | 1            | 2     | 3    | ....         | ....  | .... | 1                  | 1     | 2    | ....           | ....  | .... | 1               | 3     | 4    | 13                           |

# PECULIAR AND EXCEPTIONAL CHILDREN.

|                                                             |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |     |      |
|-------------------------------------------------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------|
| Silent.....                                                 | 2   | 9   | 11  | 1   | 7   | 8   | ... | 2   | 2   | 1   | ... | 1   | 1   | 4   | 5   | 2   | 5   | 7   | 23   |
| Imaginative.....                                            | 1   | ... | 1   | ... | 1   | 1   | ... | ... | ... | ... | ... | ... | 2   | 5   | 7   | 2   | 1   | 3   | 11   |
| Dainty.....                                                 | 5   | 1   | 6   | 1   | 1   | 2   | 2   | ... | ... | 2   | ... | 2   | 1   | 1   | 2   | ... | 7   | 7   | 15   |
| Total.....                                                  | 26  | 31  | 57  | 9   | 17  | 26  | 10  | 6   | 16  | 8   | 1   | 9   | 6   | 17  | 23  | 20  | 26  | 46  | 126  |
| Small.....                                                  | 9   | 15  | 24  | 4   | 1   | 5   | 4   | 7   | 11  | ... | 3   | 3   | 7   | 34  | 41  | ... | 1   | 1   | 66   |
| Deformed.....                                               | 4   | 4   | 8   | 1   | ... | 1   | 1   | 2   | 3   | ... | ... | ... | 22  | 17  | 39  | 11  | 4   | 15  | 62   |
| Ugly.....                                                   | 5   | 10  | 15  | 2   | 1   | 3   | ... | 7   | 7   | ... | 3   | 3   | ... | 2   | 2   | ... | ... | ... | 17   |
| Nervous.....                                                | 2   | 4   | 6   | 1   | ... | 1   | 1   | 4   | 5   | ... | ... | ... | 2   | 6   | 8   | 3   | 11  | 14  | 28   |
| Birth-marks.....                                            | 1   | 2   | 3   | 1   | 1   | 2   | ... | 1   | 1   | ... | ... | ... | 9   | 17  | 26  | 7   | 10  | 17  | 46   |
| Clumsy.....                                                 | 3   | 3   | 6   | 1   | 1   | 2   | 1   | 2   | 3   | 1   | ... | 1   | 2   | 2   | 4   | 2   | 1   | 3   | 13   |
| Bodily Weakness,<br>Mental, Sense and }<br>Speech Defect, } | 1   | ... | 1   | ... | 1   | 1   | ... | ... | ... | ... | ... | ... | ... | ... | ... | 5   | ... | 5   | 6    |
| Dirty.....                                                  | 4   | 4   | 8   | 2   | 1   | 3   | 1   | 2   | 3   | ... | ... | ... | 11  | 8   | 19  | 2   | 5   | 7   | 34   |
| Temper.....                                                 | 7   | 3   | 10  | ... | ... | ... | 6   | 3   | 9   | ... | ... | ... | 7   | 4   | 11  | 8   | 1   | 9   | 30   |
| Timid.....                                                  | 8   | 4   | 12  | 4   | ... | 4   | 4   | 4   | 8   | 1   | ... | 1   | 2   | ... | 2   | 4   | 6   | 10  | 24   |
| Whining.....                                                | 1   | 5   | 6   | ... | 1   | 1   | ... | 4   | 4   | ... | ... | ... | 5   | 7   | 12  | 6   | 8   | 14  | 32   |
| Disorderly.....                                             | ... | 1   | 1   | ... | ... | ... | ... | ... | ... | ... | 1   | 1   | 1   | 4   | 5   | ... | 1   | 1   | 7    |
| Disobedient.....                                            | 5   | 3   | 8   | 1   | ... | 1   | 3   | 2   | 5   | ... | 2   | 4   | 3   | 1   | 3   | ... | 2   | 2   | 7    |
| Cruel.....                                                  | 4   | ... | 4   | 3   | ... | 3   | ... | ... | ... | ... | ... | ... | 10  | 2   | 4   | 6   | 1   | 7   | 19   |
| Selfish.....                                                | 1   | 4   | 5   | ... | 1   | 1   | 1   | ... | 1   | ... | ... | ... | 3   | 2   | 5   | 1   | 2   | 8   | 24   |
| Gluttony.....                                               | 2   | 1   | 3   | ... | 2   | 2   | ... | ... | ... | ... | 1   | 1   | 1   | 2   | 5   | 1   | 2   | 2   | 12   |
| Spoiled.....                                                | 2   | 2   | 4   | 2   | ... | 2   | ... | 4   | 4   | 1   | ... | 1   | 1   | ... | 1   | ... | ... | 1   | 5    |
| Total.....                                                  | 60  | 66  | 126 | 22  | 11  | 33  | 22  | 42  | 64  | 5   | 10  | 15  | 95  | 111 | 206 | 61  | 55  | 116 | 448  |
| Total, 3 groups,                                            | 177 | 276 | 453 | 59  | 75  | 134 | 61  | 119 | 180 | 40  | 52  | 92  | 121 | 162 | 274 | 130 | 146 | 274 | 1001 |

TABLE IV.

|                                      | Inherited. | Not Inherited. | No Inheri-<br>tation. | Total. | Percentage<br>Inherits,<br>which<br>Inherits. | Per cent-<br>age<br>which does<br>not inheri-<br>tation. | Percentage<br>of no In-<br>formation. | Number In-<br>heriting<br>from Father. | Number In-<br>heriting<br>from the<br>Mother. | Number In-<br>heriting<br>from both<br>Parents. | Total | Percentage<br>from<br>Father | Percentage<br>from<br>Mother. | Percentage<br>from both. |
|--------------------------------------|------------|----------------|-----------------------|--------|-----------------------------------------------|----------------------------------------------------------|---------------------------------------|----------------------------------------|-----------------------------------------------|-------------------------------------------------|-------|------------------------------|-------------------------------|--------------------------|
| Boys,<br>Girls,<br>Both,<br>Group 1. | 91         | 11             | 49                    | 151    | .602                                          | .074                                                     | .331                                  | 28                                     | 29                                            | 27                                              | 84    | .184                         | .192                          | .178                     |
|                                      | 179        | 34             | 63                    | 276    | .643                                          | .122                                                     | .233                                  | 47                                     | 71                                            | 41                                              | 159   | .169                         | .255                          | .147                     |
|                                      | 270        | 45             | 112                   | 427    | .629                                          | .104                                                     | .265                                  | 75                                     | 100                                           | 68                                              | 243   | .174                         | .233                          | .158                     |
| Boys,<br>Girls,<br>Both,<br>Group 2. | 26         | 6              | 20                    | 52     | .500                                          | .115                                                     | .384                                  | 9                                      | 10                                            | 8                                               | 27    | .172                         | .192                          | .153                     |
|                                      | 31         | 17             | 26                    | 74     | .424                                          | .219                                                     | .354                                  | 17                                     | 6                                             | 1                                               | 24    | .232                         | .083                          | .013                     |
|                                      | 57         | 23             | 46                    | 126    | .456                                          | .176                                                     | .368                                  | 26                                     | 16                                            | 9                                               | 51    | .208                         | .128                          | .072                     |
| Boys,<br>Girls,<br>Both,<br>Group 3. | 60         | 95             | 61                    | 215    | .278                                          | .437                                                     | .283                                  | 22                                     | 22                                            | 5                                               | 49    | .102                         | .102                          | .023                     |
|                                      | 66         | 111            | 55                    | 232    | .284                                          | .478                                                     | .238                                  | 11                                     | 42                                            | 10                                              | 63    | .047                         | .181                          | .043                     |
|                                      | 126        | 206            | 116                   | 448    | .281                                          | .457                                                     | .258                                  | 33                                     | 64                                            | 15                                              | 112   | .073                         | .142                          | .033                     |
| Boys,<br>Girls,<br>Both,<br>Group 4. | 177        | 111            | 130                   | 418    | .423                                          | .265                                                     | .311                                  | 59                                     | 61                                            | 40                                              | 160   | .141                         | .145                          | .095                     |
|                                      | 276        | 161            | 146                   | 583    | .473                                          | .293                                                     | .250                                  | 75                                     | 119                                           | 52                                              | 246   | .125                         | .204                          | .089                     |
|                                      | 453        | 272            | 276                   | 1001   | .452                                          | .271                                                     | .275                                  | 134                                    | 180                                           | 92                                              | 408   | .133                         | .178                          | .091                     |
| Boys,<br>Girls,<br>Both,<br>Group 5. | 64         | 4              | 27                    | 95     | .673                                          | .042                                                     | .284                                  | 19                                     | 16                                            | 15                                              | 50    | .200                         | .168                          | .147                     |
|                                      | 110        | 20             | 36                    | 166    | .668                                          | .120                                                     | .228                                  | 30                                     | 41                                            | 21                                              | 92    | .180                         | .247                          | .125                     |
|                                      | 174        | 24             | 63                    | 261    | .666                                          | .091                                                     | .241                                  | 49                                     | 57                                            | 36                                              | 142   | .187                         | .218                          | .137                     |
| Boys,<br>Girls,<br>Both,<br>Group 5. | 24         | 53             | 28                    | 105    | .227                                          | .504                                                     | .262                                  | 12                                     | 9                                             | .....                                           | 21    | .114                         | .085                          | .....                    |
|                                      | 40         | 84             | 31                    | 155    | .258                                          | .541                                                     | .200                                  | 5                                      | 23                                            | 7                                               | 35    | .032                         | .141                          | .043                     |
|                                      | 64         | 137            | 59                    | 260    | .246                                          | .526                                                     | .226                                  | 17                                     | 32                                            | 7                                               | 56    | .065                         | .123                          | .027                     |

\* Groups 4 and 5 are obtained, as elsewhere mentioned, from groups 1 and 3 by omitting from 1 all but the large, the heavy, the tall, the strong, the agile, and the beautiful, and by omitting from 3 all but the ugly, the deformed, the nervous, the birth-marked, the small, the bodily weak, and those having sense or mental defects

as to whether it was on the paternal or maternal side. So it happens that the amount of inheritance from "father," "mother," and "both parents," does not equal the total amount of inheritance reported. The difference, though, is very small, and is easily obtained in each case from the tables, if desired.

In group 1 of Table IV—75, or .174, inherit from the father, 100, or .233, from the mother, and 68, or .158, from both parents. In group 2—26, or .208, inherit from the father, 16, or .128, from the mother, and 9, or .072, from both parents. In group 3—33, or .073, inherit from the father, 64, or .142, from the mother, and 18, or .037, from both parents. Of group 4—49, or .187, inherit from the father, 57, or .218, from the mother, and 36, or .137, from both parents. In the fifth group 17, or .065, inherit from the father, 32, or .123, from the mother, and 7, or .027, from both parents. Of all the cases reported 134, or .133, inherit from the father, 186, or .178, from the mother, and 92, or .091, from both parents.

Of the 583 girls—276, or .473, inherit, while of the 418 boys—177, or .423, inherit. There is, therefore, a percentage of .05 in favor of the girls. Of all the girls—75, or .125, inherit from the father, and 119, or .204, from the mother. Of all the boys—59, or .141, inherit from the father, and 61, or .145, from the mother. Decidedly more of the girls who inherit from but one parent, inherit from the mother rather than the father, while on the other hand the inheritance of the boys from the paternal side is slightly less than that from the maternal side.

The nationality is not named in all instances, but there are 100 cases in which it is named as non-American. Twelve different nationalities are represented in this group of 99 non-Americans. Twenty-five of the 99 are Irish, 24 German, 13 English, and 10 Scotch. Thirty-one of them are found in group 1 of Table IV, 18 in group 2, and 51 in group 3. Of the fifty-one in group 3, 20 are Irish, 7 German, and 7 English. In group 2 there are two who come from intermarriages, Scotch-Irish and English-Irish. In group 3 there are six children from intermarriages. Two of the six are Swede-Irish, one each French-Indian, Polish-Dane, German-English, and French-English. Five of these belong to the "cruel" children. Let it be recalled that there are 428 children in group 1, 125 in the second, and 478 in the third. We thus see that over half of the non-American element is found in the group having disadvantageous traits, which constitutes about  $\frac{2}{3}$  of the entire number of cases reported.

The great variety of terms used to describe temperaments renders any comparative estimate of their significance of little value. It is plainly observable that there is an accumulation

of terms denoting bad temperamental conditions in the last one of the three groups of Table III.

Sixty-four of the boys have dark complexions, 105 are light, 3 are said to be muddy, 3 sallow, 3 medium 1 sandy, 1 red, 1 yellowish, and 1 "between." 210 of the girls are light, 70 dark, 5 sallow, and one each medium, clean, pink, transparent, pale, olive, yellow, and red.

#### INTERPRETATION OF DATA.

*Inheritance of Good and Bad Traits.* According to these reports advantageous traits are inherited more than twice as frequently as disadvantageous ones.

Perhaps it may be urged against this that the persons reporting the various types were influenced in many cases by reason of family pride or friendship, to give undue importance to the heredity in reporting good traits, and to minimize or leave it out entirely, in reporting undesirable ones. That this might be done under such circumstances is possible, but that it was not to any great extent in these reports, is evident from the following reasons: In the first place by far the larger number of children described are neither friends nor relatives of the one reporting, as is apparent from a reading of the material. In the second place a large portion of the remainder are reminiscences, and in these, quite as frequently as in the foregoing, heredity of bad traits has been named. Likewise, when desirable qualities have been described, there are quite as frequent denials of inheritance as in the case of others. The same may be said of friends and relatives who have been described in a comparatively small number of instances. Indeed, it would seem, from the fact that defects and faulty development stimulate much more strongly the effort to account for their existence than do those peculiarities which do not fall below the average of normal development, that the prejudice would be in favor of the disadvantageous qualities. Besides, there is uniform evidence of sincerity and fidelity in the reports. The evidence which the reports themselves have to offer, added to what is so well known about the preparation of the greater part of the material, leaves little doubt as to the general reliability of the percentages upon which the conclusion here involved, rests. We are driven, therefore, to find explanations which are in harmony with the conclusion.

It will hardly be denied that the strength of inheritance in a given case is indicated by the degree of similarity manifested between parent and offspring, and that the less pronounced the similarity, the weaker the inheritance. Dissimilarity in transmission is the result of a weakening of the ancestral stock and implies degeneration. Again, it will hardly be denied that

when procreation takes place under normal conditions, the influence of the latest parents will predominate over that of any preceding pair of ancestors. When not so, degeneration has begun. This variation need not proceed very far before dissolution comes in the form of sterility or death. The unifying character of the immediate parental force, which should be strongest in its conserving potency in bringing together and holding the various elements that enter into the life of the new being, is weakened until some other ancestral strain asserts itself. Maudsley has described this process as the "unkinding of the species."<sup>1</sup> Féré has said: "If the degenerate fails to give origin to beings that resemble him, it is not because he has acquired the special faculty of transmitting characteristics that do not belong to him, but because degeneration is the dissolution of heredity."

Disease and defect usually undergo modification in transmission—if we may call such transmission—following the law of dissimilarity. Health and healthy peculiarities are not, at least to such a degree, subjected to such modification, and follow the law of similarity in transmission. If degeneration is the dissolution of the ancestral force, and if one of the evidences of degeneration is variation from the ancestral types, we should expect to find that the more pronounced degeneration is marked by the more pronounced variation, or, stated in another way, by a greater dependence on environment. There is a diminished power to control environment, to choose that which is helpful and to avoid the harmful. Self-dependence, self-determination, are lessened. Environment being a much more variable and uncertain factor than heredity, which selects and conserves in accordance with an inner law, it is to be expected that the offspring of degenerates should show more variations.

It seems unfair to say that an individual inherits disease. The general effect of diseased parentage is most likely to be manifested in children of insufficient vitality, and, therefore, of a limited power of resistance to degenerative influences. Upon such, environment has the greatest influence, and may easily fix disease. It is possible, through a long, slow, difficult process, for the degenerate stock to regain the normal condition. On the other hand a very small part of the life of a single generation is sufficient to undo what has required many generations of development. But if many generations, under improving conditions and the better health resulting therefrom, are necessary to capitalize the ancestral force so that advantageous traits may be transmitted, it ought much less to be expected that the degenerate, with diminishing ancestral vitality behind him, to-

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<sup>1</sup> "Morbidity Heredity," Féré, *Pop. Science Mo.*, July, '95, p. 396.

gether with the necessarily unfavorable surroundings, shall acquire in a few generations the power to reproduce in his offspring a peculiar disease.

To summarize the suggestions of the foregoing statements, we are influenced to regard the .629 of inheritance of desirable traits and the .281 of undesirable ones as approximately expressive of the true condition of things. First, because healthy and vigorous parents with good ancestry may, and often do, beget defective and unhealthy children. Secondly, because parents who are not vigorous or healthy require generations of improvement to produce healthy children.

A few sentences from Maudsley are interesting in this connection. He says: <sup>1</sup> "Degenerate or morbid varieties of civilized races evince a similar incapacity of procreation; sterile idiocy bring the natural termination and extinction of degenerate varieties of the human kind. In vain might the most curious despot attempt to propagate a race of idiots. . . . Is it not easy to conceive that, without being so incompatible as to actually refuse to combine, the germ elements may be so far unsuited to one another that when they combine they do so in a half-hearted way and produce an unstable compound? . . . . It is the opposite of that movement of progressive specialization and increasing complexity of relation with the external which marks advancing development."

<sup>2</sup> "There is the rapid undoing of what has been slowly done through the ages; the disruption and degenerate manifestations of faculties which have been tediously acquired; the resolution of what has been the gain of a long process of evolution; the formless ruin of carefully fashioned form. We are sad witnesses of the operation of a pathological law of dehumanization in producing dehumanized varieties of the human kind."

Likewise Féré: <sup>3</sup> "The want of resemblance in descent observed in pathological and teratological families evidences the want of embryogenic energy which is so accentuated in those families as to end in sterility in a few generations. . . . Degeneration in general results from embryogenic troubles which are reduced, as a whole, to troubles of nutrition. . . . By degeneration should be understood the loss of the hereditary qualities that have determined and fixed the characteristics of the race. . . . The dissolution of heredity, which may be realized either by the introduction of strangers of too different races, or under the influence of native causes of degeneration, is marked both by physical unlikeness and by the psychical and moral ones that necessarily accompany them. The social dis-

<sup>1</sup> "Pathology of Mind," Maudsley, p. 94 *seq.*

<sup>2</sup> "Pathology of Mind," Maudsley, p. 295.

<sup>3</sup> "Morbid Heredity," Féré, *Pop. Science Mo.*, July, 1895, p. 395 *seq.*

cords that spring up among people like those that so often divide the families of degenerates, taken together, constitute a manifestation of the dissolution of heredity; their source is in a biological fact. . . . Less and less deficient children may be observed to be born in a family of degenerates as the biological conditions of the parents improve. . . . Generation is, as a whole, the result of an excess of nutrition."

The procreative power needs to be nurtured, accumulated. It is not something that may be neither added to nor subtracted from, performing its work whenever the sexual act is consummated, by virtue of some innate and unmodifiable potency. It needs to be aggressive and positive. The greater the vitality behind it, the better the result, the more perfect the reproduction. Stating it from the other side, Shuttleworth<sup>1</sup> has said: "Mentally feeble children are often the offspring of highly neurotic parents, sometimes of highly cultured persons, exceptionally high in particular directions. It would seem, indeed, in some cases that the parents have themselves expended so much of their nervous energy that they have little left to transmit to their offspring; and familiar instances will occur to every one of distinguished men and women afflicted with children whose mental endowments are below the average.

"Mental feebleness is in some few cases the result of feeble health, and with improved physical conditions the mental impairment may gradually disappear."

Although there are few or no reports of direct investigations along this line, there are some that have a very important bearing, indirectly. <sup>2</sup>Dr. Carlsen, of Copenhagen, read a pamphlet at the International Congress of Hygiene and Demography, held at London, in August of 1891, setting forth the results of statistical investigations with reference to idiots and feeble minded persons among the Danes. He says: "The illegitimate imbecile children amounted to 5% of the total number of imbeciles, while about 10% of all births have been illegitimate in Denmark during a long period of time. As it is probable that the number of the imbeciles overlooked or forgotten in the counting is larger within the class of legitimate than within that of illegitimate children, we incline to the supposition (even if proper attention is paid to the fact of the greater rate of mortality for illegitimate children) that imbecility is scarcer among illegitimate than among legitimate children; which accords very well with the fact that, the more malignant forms of imbecility occur less frequently among the illegitimate children." It would hardly do for an explanation of this to assume

<sup>1</sup>"Mentally Deficient Children," Shuttleworth, pp. 39, 40.

<sup>2</sup>Referred to by Leffingwell, "Illegitimacy and the Influence of Seasons upon Conduct," p. 77.

that the parents of such children are more favored or better circumstanced, and that therefore the pre-natal life of the illegitimate offspring is necessarily better than that of other children. Statistics show that the death rate of such children, after birth, owing to influences in no way connected with bad health, is much higher. Their greater freedom from ailments and diseases can therefore hardly be attributed to influences that act after the beginning of the embryonic life; it must be due to the presence of greater vitality in the parents in conception, which we are warranted in assuming because the act is consummated in defiance of both civil and social law.

The investigation of M. A. Pinard, "A Propos Du Developement De L'Enfant," reported in the *Revue Scientifique* for January, 1896, should be noticed here, though it has special value as showing the greater influence of the mother in determining the future well-being of the child. His studies are based upon the data collected from the asylums and refuges in Paris for abandoned women about to become mothers. These women are received at these institutions and cared for during the period of confinement. He found in the cases of 500 women who had worked up to almost the very moment of accouchement that the combined weights of the children amounted to 1,505,000 grammes, 3,010 grammes per infant. 500 women who had sojourned at the refuge at least ten days before confinement had given birth to children whose combined weights amounted to 1,645,000 grammes, 3,290 grammes per infant, or a total excess over the entire weight of the first 500, of 140,000 grammes. 500 who had sojourned at another hospital gave birth to children whose combined weights amounted to 1,683,000 grammes, 3,366 grammes per infant, or a total of 178,000 grammes more than was found for the first group. That these differences are not due to differences between groups of women cared for at the three refuges is proven by other data which are too extended to review here. The explanation has other significance. Suffice it to say that the number of days that elapsed between conception and delivery is smaller in the first group, premature or early births being more common there. To be sure greater weight of body is not in a specific case necessary evidence of better health, but it is, generally speaking, a sign of better nutritional conditions during the intra uterine period. Or, in Pinard's words: "If the infants of those who have had repose are larger than those of the women who have not, it is simply because their intra uterine life has not been troubled, and because their incubation has been perfect. They are brought forth because they are ripe for the extra uterine life. In the case of the others, expelled prematurely, the overstrain is the stroke of the wind which causes the green fruit to fall."

The inquiries of Dr. Alexander Graham Bell and of Edward Allen Fay, into the results of deaf marriages in the United States, furnish more conclusive evidence of the general validity of the conclusion under consideration. Through their efforts, information concerning the hearing of about all the offspring of marriages of the deaf in this country has been obtained. Fay's <sup>1</sup> reports are the more comprehensive and show a total of 8,504 persons married, one or both of the partners being deaf, 7,277 are reported as deaf, 892 as hearing, and 335 are not reported whether deaf or hearing, that is 85.5 who are deaf, 10.5 who hear, and 4% who are not accounted for. There are 3,497 marriages, one or both partners being deaf. Of these, 300, or 8.5%, resulted in deaf offspring. 588 deaf children, or 8.6 of all children, were born from these marriages. Of hearing children as a result of these marriages there are 5,091, or .75 of all. There are 1,103, or .162, not reported as either deaf or hearing. The total number of children from these marriages is 6,782. The author thinks it probable "that 813 (of the 1,103 unreported) are hearing, from the fact that that number has never turned up at any of the deaf schools, while 290 of them are still-born or died before the matter of their hearing could be known." Thus we see that of the 6,782 children from these marriages, in which one or both parents were deaf, it is hardly probable that more than .086 are deaf. But let it be assumed that all of the 1,103 children that are unreported on, were deaf, we still have .75 of all who are not deaf. This extravagant allowance of .25 of deafness does not equal the .286 found for group 3 of Table I. It should not be forgotten that one of the classes of defects represented in that group is that of the senses.

Again, Fay finds 2,377 marriages in which both partners were deaf. 220 of these, or .092, resulted in deaf offspring. There were 599 marriages in which one partner only was deaf. Of these, 75, or .125 resulted in deaf offspring, or .033 more of the marriages in which one partner only is deaf than of those in which both are deaf resulted in deaf offspring. If, however, our conclusion is wrong, we should expect to find that something like twice as many of the marriages in which both partners are deaf as of those in which only one is so, would result in deaf offspring.

Furthermore, 359, or .151 of the marriages, both partners deaf, are sterile, while only 68, or .113, of those in which one partner only is deaf, are so. Of the 102 marriages in which

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<sup>1</sup> See "Marriage of the Deaf in America." American Annals of the Deaf, Jan., Feb., April and June, 1896.

one partner is unreported whether deaf or hearing, 7, or .068, are childless. Of all the marriages, 434, or 14% are sterile.

Williams,<sup>1</sup> of the American Asylum, Hartford, Conn., reports statistics of 590 marriages of the deaf. He found 283, or nearly half, of these were sterile. We are led to conclude, therefore, that the amount of sterility, and that the number of still-births and early deaths among the deaf are abnormally great, all of which are a sure sign of degeneration. Degeneration, however, marks the decay of hereditary force.

No doubt it could truthfully be urged that some deaf parents purposely avoid having children, either because of their greater inability to provide and care for them, or because they fear that those born to them might have their own defect, but this would account for only a small part of the difference. We must conclude that sterility, still-births, and early mortality, are of kindred origin, and originate in the diminished vitality devoted to procreation, of which diminution, in most cases, deafness is but one of many signs. Fay says: <sup>2</sup> "Less than one-tenth of one per cent. of children of hearing parents are deaf, in all probability. Deafness, it is true, is neither a physical anomaly nor a disease, and such expressions as transmitted deafness, inherited deafness, etc., are inaccurate and misleading. When deafness of the parents appears in the offspring, what is really transmitted and inherited is not deafness, but some anomaly of the nervous system or the tendency to some disease of which deafness is but the result or the symptoms."

In another place he quotes Sedgwick, <sup>3</sup> "On Sexual Limitation In Hereditary Disease," as follows: "The fact that a larger number of deaf children are, or appear to be, born to parents only one of whom is deaf, than when both are, may be due to excess having reversed the action of some natural law in development."

The degenerative tendencies present in the deaf and appear still more striking when we note that only 2.56 children are born per parent. If we accept Newsholme's statement that 15% of all the children born in England and Wales die before reaching the age of one year, as fairly representing the death rate in other countries, it is perfectly clear, allowing for the deaths that would occur before the reproductive age is reached,

<sup>1</sup> "Hereditary Deafness—A Study." Job Williams. Science, Vol. XVII, p. 76.

<sup>2</sup> "Marriage of the Deaf in America." Fay. American Annals of the Deaf, Feb., 1896, p. 87.

<sup>3</sup> British and Foreign Medico-Chirurgical Review, London, Vol. XXVIII, p. 204.

<sup>4</sup> "Vital Statistics," A. Newsholme, p. 104.

that the deaf would soon disappear, as a class, from natural causes, if not added to from other classes.

Again it is important to notice the increase in amount of sterility in passing from the marriages in which deafness is less pronounced, to those in which it is most so—those in which both partners are congenitally deaf. Of the 2,377 marriages, both partners congenitally deaf, 359, or .151 are sterile. Of 599 marriages, one partner deaf, the other hearing, 68, or .113, are sterile, while of the 102 marriages, one partner deaf, the other unreported whether deaf or hearing, 7, or .068 are sterile. It seems impossible, then, to avoid the conclusion that deafness has its origin in, and suggests degeneration of, a more fundamental sort than is usually associated with deafness. Let this be connected with the fact that .033 less of the parents who are both congenitally deaf, than of those, one of whom is hearing and the other deaf, beget deaf offspring, and we have suggested in an emphatic way, the explanation already offered for the greater liability to transmission of desirable traits, viz., that increasing degeneration is accompanied by decreasing potency of the reproductive powers, less and less of the ability to fix the character of the offspring. It is the triumph of environment over heredity.

It is significant that such defects as do appear to be transmitted in their likeness are such as are not incompatible with approximately normal health. Some of them may be said to originate in excessive growth, at least misdirected growth. Such are supernumerary toes, fingers, or teeth, premature grayness, baldness, plurality of births, color blindness, hair lip, squint, etc. The degeneracy implied in these is not sufficient to lead to the extinction of the stock before the peculiarity gains enough strength to be registered in the hereditary force.

The phenomena of vigorous children from parents who are not so, is most reasonably accounted for on the basis of reversion.

Decline has not proceeded far enough to injure remoter ancestral strains in the stock, and the strongest of these asserts itself at the opportunity presented by the weakened vitality of the late parents. Nature is not therefore unkind. It works for the better so long as its resources are unexhausted. There is a power in it which makes for good.

*Father and Mother.* The influence of the mother in transmitting peculiarities is greater than that of the father; is greater for girls than for boys and about equal to that of father for boys.

The greater intimacy between the life of the mother and that of the child suggest the necessity of this conclusion. It is not probable that the conscious efforts of the mother during pregnancy are sufficient to fix new and desirable qualities of character in the offspring, qualities not implied in conception, but it

is possible to nourish and strengthen those already there. On the other hand, it is possible to produce almost any degree of deformity or imperfection, from the very slightest to that which is incompatible with life. The conclusions of Pinard, already referred to, are pertinent in this connection. If, as he shows, a few days of judicious treatment near the end of the pre-natal period can produce such marked effect for good on the child, it is certainly not unfair to expect so much from it when it extends over the whole period.

Williams's report on the 590 marriages of the deaf, elsewhere referred to, shows that with congenitally deaf fathers and adventitiously deaf mothers, 5.7% of the children born are deaf, while with congenitally deaf mothers and adventitiously deaf fathers, 13.7% of the children are born deaf. When the husband is congenitally deaf and the wife hearing, 12.5% of the children are born deaf, but with the conditions reversed the result is 18.18% of deaf children. The greater influence of the mother is apparent in all his percentages.

The ages at which parents beget children is of interest here. Marro has studied the age of fathers at time of conception, among the criminal class, and has compared it with that of fathers for certain other classes. He divides them into three groups on basis of age at time of conception. Those under 25 constitute the first group, the immature; those between 25 and 40 constitute the second group, the mature, and those above 40 form the third or decadent group. Speaking of a diagram which he has employed to illustrate Marro's figures, Havelock Ellis says: "It will be seen that the largest proportion of immature parents is among the class of thieves, although among the insane the proportion is still larger. More remarkable is the abnormally large proportion of criminals with parents belonging to the period of decadence. It is most marked among the murderers, 52% of whose fathers had passed the period of maturity; but it is very large also, exceeding the insane, among those convicted of assault and wounding, and among sharpers. Sexual offenders have the largest proportion of mature fathers, the smallest of youthful fathers. Suspecting that among idiots a very large proportion of elderly fathers would be found, I applied to Dr. Langdon Down, who has kindly gone through the notes of one thousand cases and confirmed this suspicion. He finds that in 23% of the cases there has been a disparity of age of more than 10 years at the birth of the idiot child, the father in nearly every case being the elder, and that in many cases this disparity has reached more than 25 years. . . .

"It is interesting to compare these results with those of Korasi, director of the Hungarian Statistical Bureau, on the ordinary population. He has investigated 24,000 cases, and found that

the children of fathers below 20 are of feeble constitution, that fathers aged from 25 to 40 produce the strongest children, and that above 40 fathers tend to beget weak children."

Inasmuch as the period of reproduction is, as a rule, shorter with women than with men, it would seem that the age factor plays a more important part in connection with the father. However this may be, it is true that the first and the last born are, much more often than others, both mentally and physically defective. For the last born it is no doubt purely a result of age, while with the first born it may come from the immaturity of the parents, or simply from the fact of being the first born. This point will receive fuller consideration in the report on the forty-five or fifty only children in families found among the various types here studied.

*Boys and Girls.* It appears that girls are more likely to inherit than boys, and from the mother rather than the father. Girls also seem to be slightly favored in transmission of desirable traits.

This difference in favor of the girls may be attributed in a degree, perhaps, to the fact that the greater number of persons reporting the cases here studied, are females, who might be supposed, by reason of their more intimate knowledge of, and association with, their mothers, to give undue prominence to her influence and too little to that of the father. Also it should be remembered that about one-third more of the cases reported are females than males. It would not, therefore, be wise to attach anything more than a suggestive value to the relations which the percentages express. They would have more undoubted value if they were derived from a study of a much larger number of reports upon an approximately equal number of males and females, made by about the same number of observers of each sex. Yet it would be quite as unfair to assume that there is no basis in fact for the differences here indicated.

Warner, in his studies of London school children, previously referred to, found that 8.27 of the physical anomalies belonged to boys, while 6.78 belonged to girls. Newsholme found that males outnumber the females in still-births and attributes it to the greater difficulty in child-birth. His statistics show that for the ten years between 1865 and 1875 there were for every 100 female still-births, in France, 144 of males; in Italy, 140; in Belgium, 135; Sweden, 133; and in Russia, 129.

The conclusion is still further strengthened by the fact that girls appear to be favored in the transmission of desirable traits, while boys slightly preponderate in the case of undesirable ones. Boys seem to suffer more as a result of embryonic disturbances, to be in closer touch with environment, to be more readily responsible to its modifying influences, hence the very

much greater proportion of boys than of girls, elsewhere shown, to have deformities. The tendency to variation is much more pronounced in the male.

*Nationality.* There is a much greater proportion of children of non-American parentage among the defective than among others—children resulting from marriages between different nationalities being especially liable to defects.

This might be the result of one, or both, of two causes. Either the children of American parentage are especially favored, or those of other nationalities come from parentage which is in most cases below the average in development. There seems to be good reason for assuming that both statements are in a measure true, but the latter especially. Dr. S. P. Bowditch concluded, after the examination of many thousand school children of Boston, that children born of American parentage are both taller and heavier than those of parents of other nationalities. This difference, he thinks, is due partly to the greater degree of comfort which characterizes the bringing up of such children, and partly to difference of race.

*Temperament.* In a general way there appears to be agreement between temperamental conditions and health. The sanguine and cheerful are much more common in group 1, while the opposite characteristics are more frequently observed in group 3.

#### PEDAGOGICAL SUGGESTIONS.

It is usually true that the treatment described shows a great want of appreciation for the individual and peculiar. There is general assertion that a thorough and special study of each individual concerned, is necessary to right treatment. This generally acknowledged need for a better understanding of individuality is reinforced most emphatically by the whole study. The most striking thing in the reports is the pronounced recognition of individual differences. This is in harmony with what scientific studies in the laboratory have shown in numerous ways, that there are many respects in which any individual differs from another.

This aspect of mind, the right appreciation of which is so vitally important to sound pedagogy, has been very far from having the attention which it requires. Individual psychology has been entirely too much neglected. The peculiar and exceptional need far more attention. From a want of this attention individuality is constantly being misunderstood. A human life is entirely too complex and unique to be estimated and understood by the application of a few principles of general psychology. Scores of teachers have begun to realize this for the first time when standing confused and helpless before a room

full of rebellious children. With what cost the lesson is thus learned, those who have had the experience can best judge. Let it not be understood, however, that this reflects on the value and need of an equally appreciative knowledge of general psychology. But the need has not been so fully met for individual psychology.

It is a valid criticism of modern educational methods, that they have been far too little influenced by the individual basis of mind. <sup>1</sup> Whether it be true or not, as is sometimes said, that no two leaves nor two blades of grass are exactly alike, there can be no doubt that no two persons in the world are now, or ever have been, exactly alike. However close the resemblance between them, each one has some characteristic marking his individuality which distinguishes him from every one else, and which affects the course of his destiny. By the circumstances of life the development of this intrinsic quality may be checked in one direction or fostered in another direction, but it can never be got rid of; it is always there, a leaven leavening the whole lump. . . . The two twin sisters of Hungary, who were united by the bottom of their backs and had the same blood, were of extremely different temperaments, and the last years of the Siamese Twins were made miserable by the quarrels arising from the different tastes of the brothers, and the different views which they took of the American Civil War."

No other question in pedagogy manifests such a crying need for intelligent, sympathetic, patient study. Scores of thousands could testify to the truth of this out of their own bitter, even tragic experiences. Many are they who have been needlessly, almost criminally misunderstood, by those from whom they had a natural right to be properly appreciated. The easy disregard with which this right is so often overridden in the name of method, system or discipline, suggests the influence of brutality, rather than that of science. The mental suffering and anguish which defectives of the various classes are compelled to endure as a result of the stares and low curiosity of others, is barbarous. The undue and excessive regard bestowed on those of the opposite kind is scarcely less disastrous in its effects, even though it is personally agreeable to the subject. In the first we find timidity, irritability, morbidity, spitefulness, resentment, cunning, deceit, in fact about every form of malevolence resulting from a contracted personality. The individuality is turned back on itself, like an ingrown nail, to disturb and irritate. This is the natural result of being "laughed at," "ridiculed," "discriminated against," "run over," "scorned," "stared at," "made fun of," "kept

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<sup>1</sup> Maudsley, "Pathology of Mind," p. 87.

at home," "teased," "worried," "left out of games," "shunned," "discouraged," "scoffed at," etc.

In the second we find vanity, pride, self-esteem, over-confidence, daring, self-assertion, and the many other qualities belonging to exaggerated personalities. These are characteristics of those who are "petted," "encouraged," "adored," "worshipped," "respected," "shown off," "looked up to," "chosen," "indulged," etc. In both, the results are equally abnormal. In the first we have delayed and retarded individualities. In the second, as a result of over stimulation, precocious and exaggerated ones.

The organization incident to mass teaching is no doubt responsible to a considerable degree for the failure to give the individual side of mind sufficient attention, but another important factor is the emphasis placed upon the common qualities of mind by much of the so-called educational psychology. Every child has a divine right to be understood as an individual, to have his peculiarities discovered, respected, appreciated, and wisely and sympathetically dealt with. This individual quality is the most precious part of the capital with which he begins life,—the very basis of all his future mental evolution. The attempts to make it conform to the conventional standard too often result in the destruction of selfhood. While too young to understand or help himself, the child is plundered of his most valuable possessions. When old enough to appreciate in a measure his condition, to assume partial self-direction, he finds his estate loaded down with incumbrances through the carelessness of his guardians.

The writer is indebted to Drs. Hall and Burnham for many valuable criticisms and suggestions made during the progress of this study.

ERRATA.—P. 4, line 1, large type, read 1,001 instead of 1,045.

P. 4, 2d paragraph, large type, line 1, read 583 instead of 613; in line 2 read 418 instead of 432, and 1,001 instead of 1,045.

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## A TEST OF MEMORY IN SCHOOL CHILDREN.

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The experiments described below were made to test the memory of children at different periods of school life, and to determine what appeals to the different senses and to the sympathies of children at different ages. For the purpose of the test, the following story, designed to appeal about equally to different senses and faculties, was written by Dr. Hall, and divided for examination as here indicated.

James | Mack | ten years old, | a farmer's son | dreamed |  
that his father | and mother | died | very poor | and left him  
nothing | but 37 cents, | a loaf of bread | and a Bible. | The  
day after the funeral, | he had | to take these, | leave | his  
home | and his school, | and go out alone | into the wide  
world. | It was Sunday, | and a lame, | crooked, | little, |  
old | woman, | with a red | shawl | on her head, | said: "Please  
give me your Bible." | He did. | Soon he met | three | boys |  
who looked | so hungrily | at his bread, | (so) that | he gave  
it. | Then came | a ragged, | black | beggar | with a stub |  
pipe, | one | leg | and a crutch, | and into his hat | James |  
dropped | all | his money. | To a blind | schoolmate | with no  
cap, | James | gave his. | To an half | naked, | sickly, | fiddler  
| boy | with a lean | monkey, | he gave | his coat | and pants. |  
At night, | in a woods | he found | a lost | baby, | naked, |  
crying, | and as it was dark, | took off | his last | garment, | to  
wrap around it. | Made a | big | bed | of oak | leaves, | crept  
in | with the baby | and hugged it | to keep it warm. | Then as  
he lay | looking up | into the sky | he said: | "Dear | God, |  
what can I do | more?" | It was just the perfect | hush | of  
midnight, | save | the hoot of an owl | and the distant | bark of  
a dog. | Just then | the moon | peeped out | behind | a pinkish |  
cloud, | and right under it | appeared | an angel | child, | which  
he thought | was his dead | sister | Mabel's | face | smiling. |  
There seemed | a sweet | perfume, | a hand | touched | his  
head | and a gentle | voice | from the cloud said: | "This is

the Christ | child." | James | awoke. | It was Christmas | morning, | and by his bed | Santa Claus | had put | a silver dollar | a box of candy, | a bottle | of cologne, | a music box, | a loaf | of frosted cake, | a fur | tippet | and a gilt Bible | full | of colored | pictures.

The story contains 324 words, and is divided into 152 parts, which will be called "terms" for convenience. In this division of the story, it was sought to have as many terms as there were distinct facts or ideas. Tests were made in the following schools of Worcester: Woodland Street, Downing Street, Oxford Street, Winslow Street, and Salisbury Street grammar schools; both High Schools, English and Classical, and in one department at Clark University. The test was also made in a class of thirty at Miss Aiken's school, Stamford, Conn. The grammar schools where the tests were made were among the best in the city. The experiment was begun in the third grade and carried on through the fifth, seventh, and ninth grades of the grammar school and the second and fourth years of the high school. Enough over one hundred papers were secured from each of these six grades to leave fifty from girls and fifty from boys after a few had been cast out which indicated abandonment of effort or lack of effort. Where more than fifty were found, they were taken in order of occurrence until fifty had been used, and the remainder was not taken into account. Twenty papers from the University students and thirty from Miss Aiken's school were studied. The total number of papers examined was 700.

No small effort was made to avoid disturbance and to have the same conditions for all; and the pupils were encouraged to make the best possible effort. The test was made in the grammar schools in the afternoon; but as the high schools have only one session a day, the test was made in them after two hours of continuous work. If fatigue causes any considerable change in memory, it was thought that this plan made the conditions about the same as in the grammar schools. In all the schools of the city the reading was done by Miss Lesure of the Worcester State Normal School. When a room was entered preparatory to making the test, the pupils were told that they were to be given a memory test, in which a story would be read, which would take three minutes. They were requested to give the best possible attention and told that the same test had been, or would be, made in other grades and in other schools. The pupils were instructed neither to give nor receive aid, to write on sheets of paper previously placed on their desks as soon as the reading was finished, and to hand the papers to their teacher as soon as they had written all they remembered of the story. The attention and efforts of the

pupils were very satisfactory, except in one room and in a few individual cases. No unsatisfactory papers were taken into consideration.

In Miss Aiken's school the story was read at 9.30 A. M., by Mrs. Hart, a lady not connected with the school. The department at the University was given the test at 8 P. M., at a meeting of the Philosophical Club. Otherwise the conditions for these groups were the same as for the others.

In the seventh grade an additional test was made in which the pupils read for themselves. It was made the same hour in the day and, as far as possible, under the same conditions as those where the story was read to them. Type-written copies of the story were placed on each desk, with the printed side down, together with blank sheets of paper. At a given signal the pupils turned the papers over and were given three minutes to read them. This was sufficient time to read the story at a slow rate. Many commenced a second reading, and some probably read the entire story twice in this time. At a second signal they turned the papers back again and commenced writing. Fifty papers, twenty-five from girls and twenty-five from boys, were examined; and in estimating the results the numbers were multiplied by two to give a base of one hundred, as in case of the others.

The test was not merely one of word memory, nor was it a test in reproducing the thread of the story. A rigid adherence to either plan would in part have defeated the end sought. In the first case would have been the difficulty that many synonyms were used expressing the same idea, which could not be said to be lost from memory. In the second case, if strict adherence to the order of the story had been required, many papers would have been thrown out, changing the entire nature of the results. As our language is rich in its variety of expression for the same thought, or nearly the same, and every gradation down to where identity is completely lost, it was necessary to adopt a more or less arbitrary standard of acceptance. All terms which fell below this standard were not counted; but an attempt was made to maintain, as nearly as possible, the same standard in the study of all the papers. Sometimes a sentence would be so constructed that it would contain only one term that could be counted. In such a case the term was not counted, unless it retained its original meaning and was of such a nature as to indicate that it had its origin in the story. For example: "On his way he met a woman." In this sentence the word "woman" would be considered as so much of the story reproduced. In a number of cases synonyms were counted as the original, as in the sentence: "James dreamed that his parents died." "Parents"

was credited for both father and mother. "Please give me your Bible" was usually rendered "Asked for his Bible." And this form was accepted as correct. Exact terms were required in a number of cases, as in "beggar," "dropped," and in case of proper names. If substitutes had been freely accepted for "beggar" and "dropped," the nature of the sentence shows they would have been counted about as often as the term: "his money."

Few papers of any length adhered to the original order of the story. Few got the leading characters in their correct order, while their characteristics and acts were more or less confused in all. Some did not get the idea that the story was a dream. Others would have the subject go to sleep and dream after he made the bed of leaves or even later. It was a common occurrence to have the money given to the boys, or to the woman, and the bread to the beggar, or the angel said: "This is the Christ Child." In descending from the higher to the lower grades there was a decided tendency to increase the number of words used to express the same number of ideas.

Table I gives the number of times each term of the story was remembered in the different grades. The first six columns represent the grades indicated, and the numbers are based on one hundred papers, fifty from boys and fifty from girls. The boys and girls are grouped together because there were no striking differences between them except in the amount of the story remembered, which will be mentioned later. The table is self-explanatory. For example, by reference to the first number in the third grade column, it can be seen that 85 pupils remembered the word "James," and it is to be inferred that 15 failed to remember it. The next number, 27, in the same column shows the number who retained the word "Mack." Thus the table shows the per cent. as well as the actual number of pupils who remembered each term. The columns for the University and Miss Aiken's school were raised to a base of one hundred for comparison. The last column gives the average per cent. of the 600 grammar and high school pupils who remembered each term of the story. Thus the entire table is on a base of one hundred.

The test was only partially successful in determining what was expected. The appeal to the sympathies and senses was not sufficient to warrant any general conclusion in this direction. No difference between girls and boys in this respect was found. But other important results were obtained. One of the most striking facts brought out was the early age at which children reach approximately their maximum memory power. The boys in the second year of the high school remembered 43%, the highest per cent. for boys. The next highest was 42% in

TABLE I.

|                              | 3d Grade. | 5th Grade. | 7th Grade. | 9th Grade. | 2d Year, H. S. | 4th Year, H. S. | 7th Grade. Self-Reading. | University. | Miss Aiken's School. | Av. for first six columns. |
|------------------------------|-----------|------------|------------|------------|----------------|-----------------|--------------------------|-------------|----------------------|----------------------------|
| James                        | 85        | 76         | 90         | 91         | 93             | 93              | 92                       | 75          | 93                   | 88                         |
| Mack                         | 27        | 56         | 80         | 81         | 93             | 89              | 92                       | 85          | 93                   | 71                         |
| ten years old                | 20        | 20         | 28         | 58         | 68             | 69              | 50                       | 50          | 57                   | 43                         |
| a farmer's son               | 17        | 28         | 40         | 54         | 55             | 55              | 70                       | 60          | 52                   | 41                         |
| dreamed                      | 70        | 85         | 89         | 87         | 84             | 84              | 87                       | 65          | 100                  | 83                         |
| that his father              | 79        | 90         | 92         | 85         | 94             | 78              | 92                       | 85          | 93                   | 86                         |
| and mother                   | 89        | 97         | 95         | 95         | 93             | 91              | 94                       | 90          | 100                  | 93                         |
| died                         | 92        | 97         | 99         | 96         | 95             | 93              | 98                       | 95          | 100                  | 95                         |
| very poor                    | 19        | 22         | 25         | 30         | 28             | 40              | 40                       | 30          | 47                   | 27                         |
| and left him nothing         | 76        | 96         | 93         | 98         | 87             | 88              | 86                       | 80          | 100                  | 90                         |
| but 37 cents,                | 35        | 78         | 93         | 89         | 89             | 85              | 76                       | 75          | 87                   | 78                         |
| a loaf of bread              | 73        | 93         | 96         | 95         | 99             | 97              | 96                       | 90          | 100                  | 89                         |
| and a Bible.                 | 64        | 78         | 94         | 94         | 95             | 93              | 96                       | 90          | 100                  | 83                         |
| The day after the funeral    | 29        | 36         | 50         | 57         | 50             | 48              | 58                       | 45          | 43                   | 45                         |
| he had                       | 13        | 37         | 38         | 23         | 31             | 30              | 46                       | 25          | 47                   | 28                         |
| to take these,               | 6         | 15         | 21         | 29         | 28             | 27              | 14                       | 25          | 20                   | 21                         |
| leave                        | 21        | 34         | 40         | 36         | 35             | 30              | 62                       | 45          | 27                   | 32                         |
| his home                     | 18        | 24         | 32         | 29         | 26             | 24              | 54                       | 50          | 23                   | 27                         |
| and his school,              | 13        | 15         | 16         | 15         | 17             | 20              | 38                       | 15          | 10                   | 16                         |
| and go out alone             | 21        | 43         | 48         | 42         | 68             | 48              | 36                       | 35          | 53                   | 46                         |
| into the wide world.         | 26        | 55         | 57         | 62         | 68             | 60              | 46                       | 45          | 67                   | 52                         |
| It was Sunday,               | 10        | 10         | 23         | 33         | 32             | 36              | 16                       | 20          | 30                   | 23                         |
| and a lame,                  | 10        | 15         | 12         | 21         | 29             | 24              | 10                       | 15          | 33                   | 18                         |
| crooked,                     | 10        | 10         | 23         | 29         | 31             | 39              | 20                       | 35          | 47                   | 23                         |
| little                       | 3         | 3          | 5          | 9          | 13             | 15              | 12                       | 35          | 37                   | 7                          |
| old                          | 41        | 66         | 84         | 74         | 85             | 59              | 74                       | 80          | 90                   | 67                         |
| woman,                       | 58        | 81         | 90         | 91         | 95             | 92              | 94                       | 90          | 93                   | 84                         |
| with a red                   | 20        | 20         | 24         | 40         | 37             | 43              | 34                       | 40          | 63                   | 30                         |
| shawl                        | 23        | 21         | 24         | 45         | 35             | 46              | 34                       | 30          | 57                   | 32                         |
| on her head said,            | 14        | 18         | 19         | 34         | 21             | 29              | 18                       | 15          | 37                   | 22                         |
| "Please give me your Bible." | 44        | 73         | 87         | 81         | 85             | 79              | 88                       | 65          | 71                   | 77                         |
| He did.                      | 41        | 70         | 90         | 88         | 90             | 89              | 84                       | 70          | 80                   | 76                         |
| Soon he met                  | 21        | 39         | 56         | 44         | 62             | 39              | 48                       | 45          | 50                   | 43                         |
| three                        | 21        | 34         | 39         | 38         | 42             | 26              | 30                       | 30          | 37                   | 34                         |
| boys                         | 33        | 72         | 78         | 73         | 66             | 59              | 78                       | 35          | 70                   | 63                         |
| who looked                   | 22        | 52         | 58         | 61         | 59             | 46              | 72                       | 7           | 70                   | 49                         |
| so hungrily                  | 22        | 54         | 68         | 83         | 77             | 66              | 72                       | 50          | 77                   | 61                         |
| at his bread                 | 9         | 35         | 33         | 30         | 53             | 30              | 40                       | 25          | 50                   | 31                         |
| (so) that                    | 1         | 16         | 18         | 20         | 27             | 24              | 20                       | 25          | 33                   | 15                         |
| he gave it.                  | 49        | 78         | 89         | 93         | 90             | 89              | 82                       | 80          | 100                  | 74                         |
| Then came                    | 0         | 3          | 1          | 1          | 3              | 0               | 0                        | 0           | 7                    | 1                          |
| a ragged                     | 10        | 5          | 18         | 27         | 23             | 18              | 6                        | 10          | 23                   | 16                         |
| black                        | 8         | 12         | 12         | 26         | 22             | 24              | 14                       | 15          | 17                   | 17                         |
| beggar                       | 20        | 42         | 44         | 50         | 57             | 67              | 44                       | 60          | 57                   | 48                         |
| with a stub                  | 1         | 3          | 3          | 18         | 14             | 14              | 10                       | 10          | 17                   | 8                          |
| pipe,                        | 5         | 4          | 7          | 21         | 21             | 15              | 10                       | 25          | 20                   | 12                         |
| one                          | 6         | 20         | 34         | 29         | 39             | 27              | 18                       | 15          | 20                   | 27                         |
| leg                          | 7         | 24         | 38         | 34         | 43             | 33              | 22                       | 40          | 37                   | 31                         |
| and a crutch                 | 10        | 18         | 32         | 30         | 20             | 31              | 20                       | 25          | 23                   | 23                         |
| and into his hat             | 23        | 40         | 37         | 36         | 34             | 32              | 32                       | 30          | 70                   | 34                         |
| James                        | 4         | 5          | 16         | 15         | 5              | 9               | 0                        | 15          | 30                   | 9                          |
| dropped                      | 10        | 27         | 28         | 21         | 29             | 21              | 28                       | 15          | 50                   | 20                         |

TABLE I. Continued.

|                         | 3d Grade. | 5th Grade. | 7th Grade. | 9th Grade. | 2d Year, H. S. | 4th Year, H. S. | 7th Grade. Self-Reading. | University. | Miss Aiken's School. | Av. for first six columns. |
|-------------------------|-----------|------------|------------|------------|----------------|-----------------|--------------------------|-------------|----------------------|----------------------------|
| all                     | 8         | 19         | 17         | 27         | 32             | 27              | 14                       | 10          | 43                   | 21                         |
| his money.              | 45        | 80         | 92         | 86         | 90             | 89              | 82                       | 70          | 90                   | 90                         |
| To a blind              | 10        | 24         | 34         | 33         | 27             | 26              | 16                       | 20          | 43                   | 25                         |
| schoolmate              | 11        | 21         | 26         | 36         | 43             | 36              | 18                       | 40          | 53                   | 28                         |
| with no cap             | 19        | 31         | 43         | 44         | 46             | 37              | 58                       | 35          | 50                   | 36                         |
| James                   | 1         | 4          | 8          | 10         | 7              | 4               | 0                        | 5           | 7                    | 5                          |
| gave his.               | 13        | 44         | 62         | 70         | 70             | 66              | 66                       | 65          | 80                   | 55                         |
| To an half              | 8         | 26         | 37         | 27         | 18             | 18              | 14                       | 10          | 47                   | 22                         |
| naked                   | 10        | 28         | 36         | 27         | 23             | 20              | 16                       | 10          | 53                   | 23                         |
| sickly                  | 0         | 0          | 5          | 3          | 5              | 2               | 12                       | 0           | 7                    | 2                          |
| fiddler                 | 3         | 17         | 25         | 28         | 27             | 17              | 48                       | 15          | 23                   | 19                         |
| boy                     | 17        | 41         | 48         | 37         | 36             | 30              | 46                       | 30          | 50                   | 35                         |
| with a lean             | 2         | 10         | 17         | 26         | 24             | 18              | 20                       | 15          | 37                   | 15                         |
| monkey                  | 5         | 19         | 29         | 38         | 29             | 23              | 40                       | 20          | 50                   | 24                         |
| he gave                 | 21        | 50         | 79         | 76         | 77             | 78              | 64                       | 80          | 97                   | 62                         |
| his coat                | 23        | 48         | 76         | 75         | 75             | 79              | 58                       | 75          | 87                   | 62                         |
| and pants.              | 19        | 60         | 73         | 71         | 74             | 75              | 54                       | 70          | 80                   | 62                         |
| At night,               | 7         | 21         | 33         | 28         | 29             | 32              | 28                       | 25          | 23                   | 26                         |
| in a wood               | 44        | 80         | 89         | 96         | 96             | 91              | 86                       | 100         | 93                   | 82                         |
| he found                | 29        | 48         | 62         | 78         | 80             | 82              | 58                       | 75          | 73                   | 63                         |
| a lost                  | 6         | 18         | 10         | 11         | 8              | 7               | 8                        | 5           | 13                   | 10                         |
| baby,                   | 57        | 88         | 100        | 99         | 99             | 96              | 86                       | 95          | 100                  | 90                         |
| naked,                  | 18        | 50         | 64         | 64         | 68             | 57              | 48                       | 70          | 77                   | 53                         |
| crying,                 | 15        | 23         | 25         | 26         | 26             | 18              | 30                       | 30          | 13                   | 21                         |
| and as it was dark      | 4         | 8          | 13         | 24         | 25             | 30              | 10                       | 15          | 37                   | 17                         |
| took off                | 28        | 49         | 68         | 58         | 63             | 57              | 34                       | 65          | 90                   | 55                         |
| his last                | 27        | 57         | 78         | 75         | 81             | 71              | 62                       | 80          | 80                   | 64                         |
| garment,                | 30        | 74         | 83         | 77         | 93             | 73              | 64                       | 80          | 87                   | 70                         |
| to wrap around it.      | 40        | 62         | 81         | 83         | 79             | 77              | 60                       | 75          | 93                   | 70                         |
| Made a                  | 28        | 58         | 72         | 77         | 65             | 64              | 58                       | 50          | 71                   | 60                         |
| big                     | 1         | 2          | 3          | 11         | 4              | 16              | 3                        | 5           | 13                   | 5                          |
| bed                     | 30        | 60         | 73         | 77         | 68             | 65              | 58                       | 55          | 80                   | 62                         |
| of oak                  | 11        | 37         | 37         | 59         | 40             | 45              | 30                       | 15          | 50                   | 37                         |
| leaves                  | 33        | 62         | 79         | 84         | 76             | 76              | 68                       | 70          | 90                   | 68                         |
| crept in                | 26        | 51         | 67         | 72         | 76             | 64              | 40                       | 75          | 90                   | 59                         |
| with the baby           | 22        | 42         | 45         | 49         | 48             | 40              | 26                       | 40          | 57                   | 41                         |
| and hugged it           | 18        | 35         | 53         | 69         | 78             | 63              | 32                       | 65          | 87                   | 51                         |
| to keep it warm.        | 14        | 41         | 63         | 75         | 81             | 65              | 32                       | 60          | 80                   | 54                         |
| Then as he lay          | 1         | 3          | 4          | 11         | 11             | 9               | 2                        | 5           | 17                   | 6                          |
| looking up              | 9         | 22         | 31         | 33         | 44             | 34              | 20                       | 40          | 60                   | 30                         |
| into the sky            | 7         | 17         | 26         | 24         | 44             | 26              | 18                       | 30          | 50                   | 24                         |
| he said,                | 4         | 25         | 43         | 36         | 36             | 28              | 18                       | 35          | 53                   | 28                         |
| "Dear                   | 3         | 16         | 18         | 22         | 35             | 30              | 16                       | 35          | 50                   | 22                         |
| God,                    | 13        | 30         | 51         | 46         | 56             | 43              | 32                       | 45          | 70                   | 37                         |
| what can I do           | 12        | 27         | 52         | 53         | 49             | 46              | 32                       | 50          | 70                   | 41                         |
| more?"                  | 4         | 22         | 50         | 45         | 58             | 43              | 20                       | 50          | 70                   | 38                         |
| It was just the perfect | 0         | 0          | 0          | (3)        | 11             | 2               | 0                        | 0           | 13                   | 2                          |
| hush                    | 0         | 0          | 9          | 16         | 25             | 22              | 0                        | 25          | 20                   | 11                         |
| of midnight,            | 0         | 3          | 18         | 16         | 30             | 25              | 4                        | 35          | 23                   | 15                         |
| save                    | 0         | 0          | 10         | 12         | 20             | 16              | 0                        | 25          | 23                   | 9                          |
| the hoot of an owl      | 4         | 3          | 12         | 15         | 21             | 15              | 6                        | 35          | 17                   | 6                          |
| and the distant         | 1         | 2          | 5          | 5          | 7              | 5               | 0                        | 5           | 10                   | 4                          |

TABLE I. Concluded.

|                        | 3d Grade. | 5th Grade. | 7th Grade. | 9th Grade. | 2d Year, H. S. | 4th Year, H. S. | 7th Grade. Self-Reading. | University. | Miss Alken's School. | Av. for first six columns. |
|------------------------|-----------|------------|------------|------------|----------------|-----------------|--------------------------|-------------|----------------------|----------------------------|
| bark of a dog.         | 7         | 3          | 8          | 7          | 12             | 8               | 4                        | 15          | 20                   | 7                          |
| Just then              | 0         | 6          | 4          | 14         | 11             | 8               | 0                        | 10          | 13                   | 7                          |
| the moon               | 12        | 22         | 22         | 38         | 43             | 42              | 24                       | 60          | 43                   | 31                         |
| peeped out             | 11        | 20         | 21         | 31         | 31             | 33              | 18                       | 55          | 43                   | 26                         |
| behind                 | 2         | 11         | 13         | 27         | 22             | 25              | 8                        | 25          | 27                   | 17                         |
| a pinkish              | 3         | 15         | 13         | 22         | 29             | 31              | 10                       | 0           | 57                   | 18                         |
| cloud                  | 10        | 25         | 29         | 40         | 47             | 47              | 22                       | 50          | 67                   | 33                         |
| and right under it     | 0         | 3          | 3          | 12         | 14             | 12              | 4                        | 55          | 30                   | 7                          |
| appeared               | 1         | 3          | 7          | 15         | 41             | 31              | 4                        | 15          | 30                   | 17                         |
| an angel               | 12        | 44         | 54         | 62         | 58             | 56              | 46                       | 60          | 60                   | 51                         |
| child                  | 0         | 3          | 1          | 2          | 13             | 13              | 0                        | 30          | 17                   | 5                          |
| which he thought       | 17        | 38         | 41         | 49         | 51             | 56              | 52                       | 60          | 70                   | 41                         |
| was his dead           | 4         | 20         | 28         | 29         | 36             | 51              | 26                       | 55          | 67                   | 25                         |
| sister                 | 16        | 43         | 55         | 59         | 70             | 73              | 54                       | 65          | 80                   | 52                         |
| Mabel's                | 7         | 25         | 33         | 34         | 56             | 53              | 28                       | 25          | 53                   | 34                         |
| face                   | 5         | 15         | 26         | 31         | 35             | 43              | 24                       | 30          | 33                   | 26                         |
| smiling.               | 2         | 6          | 3          | 5          | 9              | 8               | 10                       | 0           | 17                   | 5                          |
| There seemed           | 0         | 1          | 0          | 1          | 4              | 2               | 0                        | 0           | 3                    | 1                          |
| a sweet                | 0         | 1          | 0          | 5          | 3              | 6               | 0                        | 0           | 10                   | 2                          |
| perfume,               | 0         | 3          | 2          | 9          | 9              | 6               | 0                        | 5           | 20                   | 4                          |
| an hand                | 2         | 13         | 15         | 20         | 21             | 14              | 8                        | 25          | 27                   | 14                         |
| touched                | 8         | 18         | 19         | 27         | 28             | 24              | 20                       | 25          | 37                   | 21                         |
| his head               | 7         | 15         | 12         | 18         | 20             | 20              | 18                       | 20          | 27                   | 21                         |
| and a gentle           | 0         | 1          | 0          | 5          | 1              | 3               | 0                        | 0           | 0                    | 1                          |
| voice                  | 4         | 9          | 10         | 27         | 25             | 33              | 10                       | 35          | 40                   | 18                         |
| from the cloud said    | 1         | 2          | 3          | 4          | 9              | 9               | 4                        | 5           | 10                   | 4                          |
| "This is the Christ    | 12        | 28         | 42         | 59         | 57             | 76              | 36                       | 85          | 77                   | 45                         |
| child."                | 11        | 20         | 39         | 51         | 48             | 72              | 30                       | 85          | 77                   | 40                         |
| James                  | 0         | 4          | 15         | 20         | 21             | 26              | 4                        | 35          | 23                   | 14                         |
| awoke.                 | 19        | 62         | 77         | 84         | 88             | 90              | 56                       | 90          | 67                   | 70                         |
| It was Christmas       | 31        | 56         | 62         | 69         | 74             | 74              | 72                       | 60          | 80                   | 61                         |
| morning,               | 19        | 37         | 57         | 64         | 51             | 77              | 48                       | 60          | 90                   | 50                         |
| and by his bed         | 2         | 29         | 32         | 51         | 63             | 70              | 22                       | 60          | 80                   | 40                         |
| Santa Claus            | 33        | 36         | 52         | 57         | 40             | 48              | 50                       | 50          | 67                   | 44                         |
| had put                | 21        | 25         | 34         | 46         | 35             | 39              | 38                       | 40          | 57                   | 33                         |
| a silver dollar,       | 22        | 56         | 72         | 76         | 76             | 74              | 52                       | 60          | 83                   | 63                         |
| a box of candy,        | 29        | 31         | 55         | 46         | 42             | 40              | 48                       | 20          | 43                   | 40                         |
| a bottle               | 10        | 18         | 21         | 19         | 26             | 32              | 28                       | 25          | 30                   | 21                         |
| of cologne,            | 8         | 9          | 13         | 16         | 26             | 31              | 26                       | 20          | 27                   | 19                         |
| a music box,           | 7         | 27         | 21         | 24         | 34             | 21              | 16                       | 20          | 30                   | 22                         |
| a loaf                 | 9         | 14         | 13         | 13         | 30             | 25              | 16                       | 20          | 20                   | 25                         |
| of frosted cake,       | 19        | 42         | 50         | 57         | 66             | 54              | 36                       | 45          | 77                   | 47                         |
| a fur                  | 1         | 8          | 20         | 33         | 35             | 33              | 2                        | 20          | 43                   | 23                         |
| tippet                 | 4         | 14         | 31         | 40         | 42             | 38              | 12                       | 35          | 50                   | 28                         |
| and a gilt Bible       | 26        | 51         | 68         | 67         | 67             | 67              | 52                       | 55          | 93                   | 55                         |
| full                   | 0         | 3          | 6          | 12         | 16             | 21              | 0                        | 0           | 37                   | 10                         |
| of colored             | 7         | 6          | 17         | 20         | 26             | 24              | 10                       | 10          | 43                   | 16                         |
| pictures.              | 8         | 12         | 20         | 22         | 26             | 28              | 14                       | 10          | 47                   | 18                         |
| Total for whole story, | 2655      | 4693       | 6005       | 6408       | 6871           | 6493            | 5122                     | 6048        | 7812                 | 5526                       |

the ninth grade, while the seventh grade made 37%, one per cent. less than that for the fourth year of the high school. Under these conditions it seems that boys reach their maximum memory power early in the high school period. The girls remembered 43% in the seventh grade and each high school grade remembered 47%. As a whole, so far as the grades ran parallel, the girls remembered 4% more of the story than the boys, and no decline of memory power was discovered in the girls. 37% of the whole story was the average remembered by all grades. This may seem a very low per cent., but it must be kept in mind that the story is a very hard one to memorize. The highest average attained by any grade was 52%, the amount remembered by a class of 30, in Miss Aiken's school, of the average age of sixteen. This high per cent. is perhaps due to special memory training<sup>1</sup> given to the class. The girls on an average had been in the school for two years.

The office of a word in a sentence determined largely how well the word was remembered. This fact is clearly shown in all the grades. The essentials of sentences were usually remembered, while accidentals faded out inversely in proportion to their importance and number.

It is surprising to note the irregularity of the average for the terms of a sentence. Some terms are remembered, while others closely connected are forgotten. The average of the five terms for all classes in the sentence: "To a blind" "school-mate" "with no cap" "James" "gave his," is in order of the terms, 25, 31, 45, 5 and 60. But the most surprising fact is the regularity with which all classes remember a given term, equally well, comparatively speaking. Trace the line of figures for each term in the above sentence across table I, and it will be found that no grade makes any considerable variation from the figures representing the average.

The first table shows the memory for the terms of this story as a function of the age and grade of the pupil. It is interesting, also, to study the strength of memory as a function of the place of the words in the story. For the latter purpose the story was divided into three equal parts, and the total number of words remembered in each part by the different grades calculated. The results are shown in the first three lines in table II. The results are given separately for boys and for girls; hence, as there were fifty of each grade, and 152 terms in the story, the highest possible total would be  $51 \times 50$ , or 2,550. Again, the story was divided into eight equal parts, and the total number of terms remembered in each of these parts by the different

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<sup>1</sup> Miss Aiken's system of training is given in her book entitled: *Methods of Mind Training*.

grades calculated. The results with this eight-part division of the story are given in the lower part of the table. Here the highest possible total would be 19x50, or 950. The last vertical column of figures in table II gives the average per cent. of

TABLE II.

|                                 | 3d Grade. |      | 5th Grade. |      | 7th Grade. |      | 9th Grade. |      | 2d yr. H. S. |      | 4th yr. H. S. |      | 7th Grade.<br>Self-reading |      | Miss Aiken's School. | University. | Average per cent. remembered by all grades. |
|---------------------------------|-----------|------|------------|------|------------|------|------------|------|--------------|------|---------------|------|----------------------------|------|----------------------|-------------|---------------------------------------------|
|                                 | GIRLS     | BOYS | GIRLS      | BOYS | GIRLS      | BOYS | GIRLS      | BOYS | GIRLS        | BOYS | GIRLS         | BOYS | GIRLS                      | BOYS |                      |             |                                             |
| I.                              | 731       | 708  | 1042       | 1014 | 1293       | 1208 | 1282       | 1328 | 1412         | 1296 | 1851          | 1187 | 1202                       | 1166 | 1425                 | 1134        | 46                                          |
| II.                             | 407       | 375  | 855        | 824  | 1197       | 1050 | 1149       | 1195 | 1242         | 1194 | 1194          | 973  | 814                        | 898  | 1461                 | 1035        | 38                                          |
| III.                            | 258       | 186  | 540        | 418  | 730        | 527  | 861        | 693  | 939          | 788  | 1048          | 740  | 596                        | 446  | 1020                 | 855         | 27                                          |
| I.                              | 432       | 414  | 511        | 526  | 625        | 599  | 625        | 617  | 665          | 595  | 643           | 589  | 614                        | 656  | 642                  | 562         | 61                                          |
| II.                             | 236       | 213  | 394        | 355  | 503        | 425  | 495        | 473  | 546          | 502  | 517           | 404  | 534                        | 380  | 556                  | 397         | 45                                          |
| III.                            | 118       | 130  | 241        | 232  | 304        | 295  | 303        | 364  | 343          | 324  | 309           | 311  | 256                        | 248  | 391                  | 273         | 29                                          |
| IV.                             | 173       | 131  | 332        | 343  | 455        | 423  | 428        | 462  | 443          | 428  | 428           | 383  | 356                        | 426  | 505                  | 397         | 40                                          |
| V.                              | 168       | 178  | 376        | 344  | 500        | 439  | 501        | 515  | 520          | 519  | 518           | 405  | 334                        | 292  | 647                  | 448         | 44                                          |
| VI.                             | 52        | 50   | 135        | 104  | 229        | 152  | 267        | 212  | 324          | 270  | 324           | 187  | 130                        | 134  | 318                  | 283         | 21                                          |
| VII.                            | 63        | 33   | 169        | 96   | 214        | 131  | 256        | 199  | 272          | 255  | 348           | 240  | 202                        | 136  | 344                  | 292         | 21                                          |
| VIII.                           | 155       | 120  | 279        | 257  | 400        | 321  | 437        | 374  | 480          | 385  | 506           | 380  | 288                        | 240  | 538                  | 350         | 36                                          |
| Per cent. remembered by grades. | 18        | 17   | 32         | 30   | 43         | 37   | 44         | 42   | 47           | 43   | 47            | 38   | 36                         | 33   | 52                   | 39½         | 37                                          |

terms remembered in each part of the story by all grades. The line of figures at the bottom of the table shows the per cent. of the whole story remembered by the grades under which the numbers are written.

The first third of the story was remembered better than the second third by all grades with one exception. The second third of the story was remembered better than the last third without exception. The relative difference for the three parts is much greater in the lower grades than in the higher ones. The lowest grade remembered about one-third as much of the last part of the story as of the first, while the fourth year high school remembered 70% as much of the last third as they did of the first. The marked difference in the seventh grade, where the pupils read for themselves, is probably due to their reading the first part twice. The per cent. remembered by all in the three-part division was successively 46, 38 and 27. Practically the same ratio is sustained by all grades. Had the table been divided into four equal parts, the per cents would have been successively 52, 34, 31, and 28. When the eight-part division is considered, the same regular decline of memory in each successive part no longer appears. The first eighth, however, was remembered better by all grades, with one exception, than any other part; and the fifth was remembered better in all cases than any succeeding part. It was expected that the first part would be remembered best, but it could not be anticipated that the curve would take the course that it did. The largest part of the falling off is probably due to fatigue, but not all. The subject matter, the arrangement and length of sentences, and the manner of presentation, all had their influence. But these modifying conditions explain the irregularity of the falling off rather than its cause.

It seemed from the returns, that the memories of some pupils act spasmodically. They remember a portion with a considerable degree of accuracy; then they pass on for some distance without getting anything. Others touch, as it were, only the "high places," and so continue through the whole story. Some with a limited power of reproduction bring out the least expected points. A considerable number remember the first part of the story quite well and remember very little in the latter part. Here fatigue seemed quite clear.

In considering the causes of the variation in the eight-part division, it may be said that the mind is in an unfatigued and in an expectant mood at the beginning. The first sentence is an impressive and important part of the story. Hence the first eighth was remembered quite well. The second part, beginning with "go out alone" and ending with "at his bread," contains rather a striking feature, but it contains so many modifiers

that it possibly is not remembered as well as might be expected. In the third part we have one complete sentence and five terms from two others, only one of which is an essential. The entire sentence concerning the "beggar" is largely made up of accidental modifiers, and as no substitutes were accepted for "beggar," "James" and "dropped," it is not strange that this part is remembered poorly. The fourth part begins with "James" "gave his" followed by a sentence containing striking modifiers, and concludes with "crying" in a sentence which could not fail to awaken renewed interest. The fifth part is remembered better, probably owing to the subject matter and its manner of presentation. The sixth and seventh parts beginning with "God" and ending with "James" are probably low on account of fatigue, and the fact that the subject matter did not come within the range of sense experience. The last eighth makes quite a generous appeal to the senses, and for the greater part contains familiar subject matter. It would be remembered also, because it was the last. Doubtless this would not have been remembered so well had something more followed. Inspection of the eight-part table shows that the per cent. remembered by all for the different parts, has a corresponding order of value in the numbers for each grade. (See Table II.)

The relative retention of the different terms in memory is shown by the following: Four terms were remembered on an average by at least 90% of the pupils; 12 by 80%; 20 by 70%; 33 by 60%; 41 by 50%; 60 by 40%; 77 by 30%; 108 by 20%, and 130 by 10%.

Table III shows what terms appealed most, and what least, to memory. It gives the actual number of pupils who remembered the terms mentioned, i. e., it is on a base of fifty, except the columns for the University and Miss Aiken's class, have one hundred for a base. The first 16 terms are the only ones in the entire story remembered by as many as 75% of all. It is noteworthy that ten of these are in the first sentence. Three are in the second eighth of the story, two in the third eighth, and one in the fourth eighth. The next ten terms are the best examples of terms remembered about equally well by all grades, and not by a large number in any grade. The three terms: "It was Christmas," "Santa Claus," and "box of candy," all come near the end of the story; and it is worthy of note that nearly all in the third grade who remembered anything in the last part of the story remembered these terms. The fifth grade differed but little from the third in this particular. The same cannot be said of any of the higher grades. This was probably due to the fact that these words appealed most to sense association. Next in the table are given eleven terms, no one of which was remembered by more than 7%. For the

TABLE III.

|                                                                                                             | 3d Grade. |    | 5th Grade. |    | 7th Grade. |    | 9th Grade. |    | 2d Year, H. S. |    | 4th Year, H. S. |    | 7th Grade, Self-Reading. |    | University, Miss Aiken's School. |     |
|-------------------------------------------------------------------------------------------------------------|-----------|----|------------|----|------------|----|------------|----|----------------|----|-----------------|----|--------------------------|----|----------------------------------|-----|
|                                                                                                             | G.        | B. | G.         | B. | G.         | B. | G.         | B. | G.             | B. | G.              | B. | G.                       | B. | %                                | %   |
| James Mack dreamed that his father and mother died and left him 37 cents a loaf of bread and a Bible. woman | 44        | 41 | 41         | 35 | 45         | 45 | 47         | 44 | 48             | 45 | 45              | 48 | 44                       | 48 | 75                               | 93  |
| "Please give me your Bible."                                                                                | 11        | 16 | 28         | 28 | 42         | 38 | 43         | 38 | 46             | 47 | 42              | 47 | 46                       | 46 | 85                               | 93  |
| He did.                                                                                                     | 34        | 36 | 46         | 39 | 46         | 43 | 43         | 44 | 41             | 43 | 45              | 39 | 48                       | 48 | 65                               | 10  |
| he gave it. (bread).                                                                                        | 41        | 38 | 44         | 46 | 46         | 46 | 41         | 44 | 46             | 48 | 40              | 38 | 48                       | 44 | 85                               | 93  |
| his money.                                                                                                  | 45        | 44 | 49         | 48 | 48         | 47 | 47         | 48 | 47             | 46 | 48              | 43 | 48                       | 46 | 90                               | 100 |
| baby                                                                                                        | 47        | 45 | 49         | 48 | 49         | 50 | 49         | 47 | 47             | 48 | 48              | 45 | 50                       | 48 | 95                               | 100 |
| very poor crying                                                                                            | 40        | 36 | 50         | 46 | 45         | 48 | 49         | 49 | 46             | 41 | 43              | 45 | 42                       | 44 | 80                               | 100 |
| It was Christmas Santa Claus box of candy                                                                   | 16        | 19 | 38         | 40 | 46         | 47 | 43         | 46 | 45             | 44 | 42              | 43 | 38                       | 38 | 75                               | 87  |
| James (dropped) lost                                                                                        | 37        | 36 | 48         | 45 | 48         | 48 | 47         | 48 | 49             | 50 | 47              | 50 | 50                       | 46 | 90                               | 100 |
| the hoot of an owl bark of a dog, smiling.                                                                  | 35        | 29 | 42         | 36 | 49         | 45 | 48         | 46 | 50             | 45 | 46              | 47 | 50                       | 46 | 90                               | 100 |
| Then came James (gave his cap). sickly                                                                      | 31        | 27 | 45         | 36 | 48         | 42 | 47         | 44 | 49             | 46 | 47              | 45 | 48                       | 46 | 90                               | 93  |
| Then as he lay                                                                                              | 26        | 18 | 39         | 34 | 47         | 40 | 42         | 39 | 44             | 41 | 41              | 38 | 48                       | 40 | 65                               | 71  |
| It was just the perfect and the distant                                                                     | 22        | 19 | 37         | 33 | 47         | 43 | 46         | 42 | 49             | 41 | 43              | 46 | 44                       | 40 | 70                               | 80  |
| There seemed a sweet perfume and a gentle from the cloud                                                    | 23        | 26 | 38         | 40 | 47         | 42 | 45         | 48 | 46             | 44 | 44              | 45 | 44                       | 38 | 80                               | 100 |
| 37 cents {                                                                                                  | 24        | 21 | 40         | 40 | 47         | 45 | 45         | 41 | 45             | 45 | 44              | 43 | 38                       | 44 | 70                               | 90  |
| dropped {                                                                                                   | 31        | 26 | 43         | 45 | 50         | 50 | 49         | 50 | 49             | 50 | 46              | 46 | 42                       | 44 | 95                               | 100 |
|                                                                                                             | 9         | 10 | 16         | 6  | 15         | 10 | 15         | 15 | 17             | 11 | 24              | 16 | 22                       | 18 | 30                               | 47  |
|                                                                                                             | 9         | 6  | 11         | 12 | 13         | 12 | 15         | 11 | 14             | 12 | 12              | 6  | 10                       | 20 | 30                               | 13  |
|                                                                                                             | 18        | 13 | 32         | 24 | 33         | 29 | 35         | 34 | 38             | 36 | 36              | 38 | 36                       | 36 | 60                               | 80  |
|                                                                                                             | 18        | 15 | 14         | 22 | 23         | 29 | 34         | 23 | 21             | 19 | 25              | 23 | 36                       | 14 | 50                               | 67  |
|                                                                                                             | 16        | 13 | 17         | 14 | 26         | 29 | 21         | 25 | 24             | 18 | 24              | 16 | 32                       | 16 | 20                               | 43  |
|                                                                                                             | 2         | 2  | 2          | 3  | 9          | 7  | 6          | 9  | 3              | 2  | 6               | 3  |                          |    | 15                               | 30  |
|                                                                                                             | 3         | 3  | 8          | 10 | 2          | 8  | 4          | 7  | 6              | 2  | 3               | 4  | 6                        | 2  | 5                                | 13  |
|                                                                                                             | 3         | 1  | 2          | 1  | 8          | 4  | 8          | 7  | 14             | 7  | 11              | 4  | 6                        | 5  | 10                               | 5   |
|                                                                                                             | 2         | 5  | 2          | 1  | 6          | 2  | 4          | 3  | 8              | 4  | 5               | 3  | 4                        |    | 15                               | 20  |
|                                                                                                             | 2         |    | 3          | 3  | 3          |    | 1          | 4  | 4              | 5  | 5               | 3  | 4                        | 6  |                                  | 17  |
|                                                                                                             |           |    | 2          | 1  |            | 1  |            | 1  | 3              |    |                 |    |                          |    |                                  | 7   |
|                                                                                                             | 1         |    | 3          | 1  | 5          | 3  | 2          | 8  | 4              | 3  |                 | 4  |                          |    | 5                                | 7   |
|                                                                                                             |           |    |            |    | 3          | 2  |            | 3  | 1              | 4  | 2               |    | 4                        | 8  |                                  | 7   |
|                                                                                                             |           | 1  | 2          | 1  | 3          | 1  | 6          | 5  | 6              | 5  | 4               | 5  |                          | 2  | 5                                | 17  |
|                                                                                                             |           |    | 1          |    | 3          | 2  | 2          | 1  | 9              | 2  | 1               | 1  |                          |    |                                  | 13  |
|                                                                                                             |           | 1  | 2          |    | 3          | 2  | 3          | 2  | 4              | 3  | 5               |    |                          |    | 5                                | 10  |
|                                                                                                             |           |    | 1          |    |            |    | 1          | 3  | 1              |    |                 | 2  |                          |    |                                  | 3   |
|                                                                                                             |           |    |            | 1  |            |    | 3          | 2  | 1              |    | 2               | 4  | 2                        |    |                                  | 10  |
|                                                                                                             |           |    | 2          | 1  | 1          | 1  | 6          | 3  | 4              | 5  | 4               | 2  |                          |    | 5                                | 20  |
|                                                                                                             |           |    | 1          |    |            |    | 5          |    |                | 1  |                 | 2  | 1                        |    |                                  |     |
|                                                                                                             | 1         |    | 1          | 1  | 1          | 2  | 3          | 1  | 2              | 7  | 5               | 4  | 2                        | 2  | 5                                | 10  |
| 37 cents {                                                                                                  | 16        | 19 | 38         | 40 | 46         | 47 | 43         | 46 | 45             | 44 | 42              | 43 | 38                       | 37 | 75                               | 87  |
| dropped {                                                                                                   | 24        | 21 | 10         | 8  | 4          | 3  | 5          | 4  | 4              | 3  | 4               | 3  | 10                       | 6  | 15                               | 13  |
|                                                                                                             | 7         | 3  | 14         | 13 | 15         | 13 | 15         | 6  | 11             | 18 | 9               | 12 | 14                       | 14 | 15                               | 50  |
|                                                                                                             | 17        | 18 | 26         | 26 | 31         | 29 | 30         | 35 | 33             | 28 | 32              | 30 | 16                       | 16 | 45                               | 20  |

last two terms in the table, "37 cents" and "dropped," are given first the number who remembered them, and then the number who substituted some synonym. If these synonyms

had not been reckoned as errors, these two terms would have stood high on the list remembered.

It is interesting to see that the four terms: "mother," "died," "and left him," and "baby," were the only terms remembered by ninety per cent. The twelve terms remembered by eighty per cent. were "James," "dreamed," "that his father," "and mother," "died," "and left him," "a loaf of bread," "and a Bible," "woman," "his money," "in a wood," and "baby." Forty-one terms were remembered by fifty per cent. of all. These terms written in a story, with enough added to connect them, read as follows, the parts supplied being printed in italics:

"James" "Mack" "dreamed" "that his father" "and mother" "died" "and left him nothing" "but 37 cents," "a loaf of bread" "and a Bible." *He went out* "into the wide world." *An* "old" "woman" "asked him for his Bible." "He gave it." *Then* "gave his bread" *to some* "hungry" "boys" *and* "he gave" *away* "his money," "his cap" *and* "his coat" "and pants." "In a wood" "he found" "a naked" "baby," *and* "took off" "his last" "garment" "to wrap around it;" "made" "a bed" "of leaves," "crept in" "and hugged the baby" "to keep it warm." *Then he saw* "an angel" *that looked like* "his sister," *and when he* "awoke," "it was Christmas" "morning," *and he found near him a* "silver dollar" "and a gilt Bible."

A story made up in a similar manner from one hundred and eight terms, embracing all terms remembered by 20%, reads as follows: "James" "Mack" "ten years old," "a farmer's son" "dreamed" "that his father" "and mother" "died," "very poor," "and left him nothing" "but 37 cents," "a loaf of bread" "and a Bible." "The day after the funeral" "he had" "to take these," "leave" "his home" "and go out alone" "into the wide world." "It was Sunday" *and a* "crooked," "old" "woman" "with a red" "shawl" "on her head, said:" "Please give me your Bible." "He did." "Soon he met" "three" "boys" "who looked" "hungrily" "at his bread." "He gave it" *and met a* "beggar" "with one" "leg" "and a crutch" *and* "into his hat" "dropped" "all" "his money." "To a blind" "schoolmate" "with no cap" *he* "gave his." "To a half" "naked" "boy" "with a monkey" "he gave" "his coat" "and pants." "At night" "in a wood" *he saw* "a baby" "naked," "crying," "took off" "his last" "garment" "to wrap around it." "Made a" "bed" "of oak" "leaves," "crept in" "with the baby" "and hugged it" "to keep it warm." "Looking up" "into the sky" "he said:" "Dear" "God" "what can I do" "more?" "The moon" "peeped out" *from* "a cloud,"

and "an angel" *was seen* "which he thought" "was his dead" "sister" "Mabel's" "face." *Some one* "touched" "his head" and said: "This is the Christ" "child." *He* "awoke." "It was Christmas" "morning" "and by his bed" "Santa Claus" "had put" "a silver dollar," "a box of candy," "a bottle of cologne," "a music box," "a loaf" "of frosted cake," "a fur tippet" "and a gilt Bible."

Apart from the errors in spelling, in understanding the words, etc., the errors may be classed as errors of omission, insertion, substitution, and misplacement. In the higher grades, in general, the part remembered was nearest the exact reproduction, while parts left out were clear omissions. The terms most frequently omitted are clearly indicated by table I. Insertion was due to imagination. In different grades it frequently seemed that memory retained a vague notion of what had been given and imagination supplied the forgotten part from experience of a similar nature. The purest form of imagination was found in the third grade.

Substitution occurred most frequently where words used in the story had approximate synonyms in the child's vocabulary. Displacement occurred most frequently in the order of the personages mentioned, and where modifiers in one instance seemed well adapted in another. The misplaced parts, when so recognized, were not counted as errors in making out the results.

All degrees of inaccuracy were found in the paper, from mere failure to understand a word, to pure products of imagination. For example, James Mack became John Mack, Tommy Mack and Henry Mark; again, James Back, Baker, Brock, Shaw, Brown, Dean, Hall; and in some cases was abbreviated to Ned, Fred, Jack or Willie. According to some of the more imaginative ones: "James was a rich boy and died poor." "The farm was very small." "Now was his chance to go into the wide world to seek his fortune." "He met a blind girl," again, "a poor negro witch." He "begged his prayer-book;" exclaimed, "Thank the Lord all my things are gone;" "brought the baby into the stump of a tree;" "made a nest of grass." "The sun was streaming full into the window." "Nothing was heard but the rustle of the leaves," "save the sound of some bird in the distance." "As he was near the woods he did not care much." "He flew to the woods." "He had a thought come into his head that his father were dead." Christmas gave special opportunity for play of the imagination. "He awoke and found some pictures which he spent the rest of his days looking at." "He dreamed that Santa Claus had brought him a loaf of bread, a glass of wine, a Bible, a new hat, a new pair of drawers, a new waist, a box

of candy and 37 cents." "In his stockings was a box of candy, a silver dollar, a frosted cake and a beautiful Bible with many colored pictures." Again, "Christ gave him a silver dollar," a "Bible full of choicest candies." He found "A gold silk Bridle."

No one paper can be said to be typical in all respects. The story, as remembered by 20% or 50%, gives the terms best remembered. Four papers, however, are appended as illustrative. The first two are among the poorest from the third grade. Both are quite imaginative. One retains some idea of the latter part of the story, while the other does not.

"James Mack, 10 years old, dream that his mother was dead. And James Mack had a brother named John Mack. James Mack was sick the day Christmas. And Santa Clase came down throw the chimble, and gave him a loaf of cake and a box ful of candy, and a rattle. All the boys gave him some pressents She gave him a dolar. He had a grate many pressents."

"James Mack was a little boy who was poor he lived in a country where were people who were naughty and there was aagle came and saw all this and told on them. They thought that they would be good."

The two following versions show how much was remembered by those who succeed best. The first contains 115 and the second 127 terms, as counted. The second was the best paper in all examined.

James Mack, ten years old, dreamed one night that both his parents died and left him alone in the world, with 37 cents, a loaf of bread, and a bible.

The day after the funeral, he took these and went out into the wide world. It was Sunday, and an old crooked woman with a red cape, said, "Give me your bible." He did so. Then he met three boys, who looked so hungrily at the loaf of bread that he gave that to them. He saw an old black beggar, and dropped all his money into his cap. A poor blind school mate of his had no cap, and James gave him his. Soon he met a poor Italian boy, who had a fiddle and a lean monkey. He took off his coat and pants and gave to him. He went into the woods and there he found a baby, all naked and cold. As it was dark, he took off his only remaining garment and wrapped around it. Then he made a bed of oak leaves, crept in with the baby, and hugged it to keep it warm.

It was just the soft hush of midnight, the stars were shining overhead, and James lifted his eyes and said, "Dear God, what can I do more?" Just then the moon arose above a pinkish cloud, and underneath appeared an angel. He thought the face was that of his dead sister, Mabel, who was smiling at him. A hand was laid on his shoulder and a voice said, "It is the Christ child."

He awoke. It was Christmas morning, and Santa Clause had left at his bed-side, a silver dollar, a box of candy, a gilt bible, a frosted cake, a bottle of perfumery, and a music box.

James Hack, ten years old, a farmer's son dreamed that his father and mother died, leaving him alone and very poor, with thirty-seven cents, a loaf of bread and a Bible. The day after the funeral he had to go out, friendless and poor, into the wide world. A crooked, lame little old woman with a red shawl said, "Give me your Bible." He did so. Farther on, two boys gazed so hungrily at his bread that he gave it. Then came a black ragged beggar with a stump pipe, a wooden-leg, and a crutch. Into his hat James dropped all his money. To a blind schoolmate without a cap, he gave his. To a poor thin half-naked organ-boy with a lean little monkey he gave his coat and pants. About night-fall he entered a wood where he found a little baby, almost naked, and as it was quite dark he took off his last garment to wrap around it. Then he made a soft bed of the leaves of the oak and slipped into it with the baby, hugging it close to keep it warm. As he lay there looking up into the sky he said "Dear God, what more can I do?" It was the quiet hush of midnight and there was no sound, except the barking of a dog. Just then the moon came out from behind a pinkish cloud, and just below it appeared the face of an angel-child. James thought it was the face of his sister Mabel who had died. There seemed to be a soft perfume, then a touch on his head and a voice said: "This is the Christ child."

James awoke. It was Christmas morning and Santa Claus had left beside his bed a silver dollar, a box of candy, a bottle of cologne, a music-box, a loaf of frosted-cake and a gilt Bible full of colored pictures.

The story as written for the test, did not aim at literary form, but a difficult story for memorizing was desired, containing elements that would appeal more or less to children of all the different grades. It is noteworthy that a considerable number of those who got an intelligent understanding of the story improved upon its literary form. The two papers just given are conspicuous examples.

Résumé.—For a story like the one employed and under the conditions described above, the maximum memory power is reached at a relatively early age. The boys in the third grade remembered only 17% of the story. In the ninth grade they remembered 42%, and in the high school about 40%. From this it seems that memory power for the boys culminates about the beginning of the high school period. The girls made a rapid increase from 18% in the third grade to 43% in the seventh grade, and 47% in the high school. The class in Miss Aiken's school remembered 52%. This high average is probably due to special training, not usually given in public schools.

The office of a term in the sentence, and the number of like terms employed, determined how well a given term was remembered. It may be said that sentences, as wholes, were remembered inversely in proportion to their length and the number of non-essentials contained. Of the sixteen terms remembered by 75%, eleven are in the first sentence, and not one in the last half of the story. About two-thirds of the 41 terms remem-

bered by 50% are in the first half of the story. The decline of memory for the successive parts of the story is shown by the per cents for the three-part division of the story. They are successively 46, 38, and 27. A four-part division would give 52, 34, 32, and 28. Much of the falling off is doubtless due to fatigue, but some of it is due to changes in subject matter, as can be seen in table I, where sudden variations are found in the amount remembered. A decline of memory from the first to the last of the story was found in all grades, but the rate of decline was not the same in all.

The growth of memory is more rapid in case of girls than boys, and here the figures suggest a coincidence with the general law that the rapid development incident to puberty occurs earlier in girls than in boys. No other appreciable difference between the memory of boys and that of girls is apparent, except that the girls remembered 4% more of the story than the boys, and the girls in higher grades showed a better retaining power for the latter part of the story.

It is surprising how few remembered some terms in a sentence, while other terms in the same sentence were remembered by a large number. There seemed to be marked similarity of apprehension in all the different grades; for any term remembered by a large or small number in one grade, was remembered by approximately the same number in every other grade. No part of the story, nor any term, other than those elsewhere mentioned made a noticeable appeal to any grade, which did not in like manner appeal to all the other grades.

The writer takes this opportunity to thank Dr. Hall and Dr. Burnham for counsel in this work, and Supt. Carroll, Miss Lesure, of the Normal School, and others connected with the schools of Worcester, as well as Miss Aiken, of Stamford, Conn., for their aid in making the tests.

## APPENDIX.

Another mode of presenting the result of similar tests is the following:

The number above the line shows how many out of one hundred sixth grade children remembered the terms of the following story in a memory test.

|                                                         |           |           |                                 |           |          |           |           |
|---------------------------------------------------------|-----------|-----------|---------------------------------|-----------|----------|-----------|-----------|
| <u>30</u>                                               | <u>98</u> | <u>75</u> | <u>36</u>                       | <u>86</u> | <u>8</u> | <u>36</u> | <u>77</u> |
| A young man worked years to carve a white marble statue |           |           |                                 |           |          |           |           |
| <u>70</u>                                               | <u>67</u> | <u>38</u> | <u>7 (until it was finished</u> |           |          |           |           |
| of a beautiful girl. She grew prettier than any one had |           |           |                                 |           |          |           |           |
| substituted by 1)                                       |           |           |                                 | <u>23</u> | <u>5</u> |           |           |
| ever been. He began to love the statue so well that     |           |           |                                 |           |          |           |           |

<sup>34</sup> one day <sup>28</sup> he said to it: <sup>18</sup> I would give <sup>13</sup> everything  
*two-thirds substituted "I wish"*  
<sup>12</sup> in the world <sup>58</sup> if you would be alive <sup>76</sup> and be my wife.  
*instead.*  
<sup>11</sup> Just then <sup>62</sup> the clock struck <sup>60</sup> twelve, and <sup>9</sup> the cold stone  
<sup>40</sup> began to grow warm, <sup>52</sup> the cheeks red, <sup>36</sup> the hair brown,  
<sup>34</sup> the lips to move, <sup>58</sup> she stepped down, <sup>77</sup> and he had his wish.  
<sup>48</sup> They lived happily <sup>32</sup> together for years <sup>76</sup> and three beautiful  
<sup>76</sup> children were born. <sup>86</sup> One day <sup>9</sup> he was very tired <sup>31</sup> and grew  
<sup>65</sup> so angry, <sup>25</sup> without cause, <sup>87</sup> that he struck <sup>36</sup> her. <sup>62</sup> She wept,  
<sup>62</sup> kissed <sup>53</sup> each child <sup>63</sup> and her husband, <sup>26</sup> stepped back  
<sup>49</sup> upon the pedestal <sup>17</sup> and slowly grew cold, <sup>3</sup> pale and stiff,  
<sup>12</sup> closed her eyes, <sup>23</sup> and when the clock <sup>13</sup> struck <sup>22</sup> midnight  
<sup>55</sup> she was a statue <sup>3</sup> of pure white <sup>8</sup> marble <sup>34</sup> as she had been <sup>15</sup>  
<sup>15</sup> years before, <sup>29</sup> and could not hear <sup>29</sup> the sobs of her husband  
<sup>28</sup> and children.

## A STUDY OF CHILDREN'S DRAWINGS IN THE EARLY YEARS.

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The following study is based on over thirty-four hundred drawings by children of all ages from two years old up to fifteen and sixteen. Drawings by children between two and a half and seven years were especially asked for and most of those sent in are of those years. Several extended collections of the drawings of individual children have been received and are among the most valuable of all. Kindergarten drawings illustrating stories predominate, but many collections from the busy-work periods and from the drawing books of primary grades are among the number. The chief points discussed are: the pictorial evolution of the human figure, the child's mental attitude toward drawing, appreciation of pictures, the contents of children's minds, what they draw to please themselves, and finally, a few suggestions toward a proper course in drawing for the early years of the elementary school. The illustrations are at the end of the article, pp. 102 to 110.

### PICTORIAL EVOLUTION OF MAN.

The accompanying series of eleven drawings were all made by a little girl, Lillian L., during a period extending from when she was 2 yr. 3 mo. till she was 4 yr. 9 mo. She is an only child, has never drawn much nor been encouraged by the comradeship of others who draw. She has attended kindergarten a few weeks since she was 4 yr. 5 mo. old.

I. *At 2 yr. 3 mo.* In answer to the request to draw a picture of a man she promptly makes a tangle of scribbles and calls it "man" (Fig. 1.) Another exactly similar one she says is a "picture of herself" (Fig. 2), still another she points out as a "mouse," another is "money," etc. Baldwin in his "Mental Development," p. 84 ff., gives a number of such drawings of man, cat, bird, doll, horse and cow, all drawn by his little girl between 19 mos. and 27 mos. They all show

the utter lack of any apparent connection between a mental picture in consciousness and the movements made by the hands and fingers in attempting to draw it. The most that can be said is perhaps that the child imitates in a general way the outward movements that he sees older persons make in drawing. He has not yet gotten the inside view of the process but only its outward mechanical movement. I can myself well remember as a child attempting to draw by simply scribbling around with the pencil, expecting that the picture I wanted would arise, as if by magic, out of the mass of lines. Many of us stick in this scribble stage of drawing development all of our lives.

Baldwin<sup>1</sup> goes on to theorize on the development in the child's mind of visual-form series, optical-movement series and muscular-form series, attaching great theoretical importance to the subsequent "reversal of association" between the first two series, thereby giving the lead and control to the visual-form series. This is the very interesting theory of the rise of "tracery imitation" which brings us to the second stage.

II. *At 3 yr. 4 mo.* (Fig. 3). The child drew one perpendicular line which she called a leg, then a parallel line which she called the other leg. Then she scribbled over them and made what she called trousers. Her mother meanwhile looked on in silence, giving no suggestions. The scrawl in the middle she called "his face," pointing out "eyes," "nose" and "mouth." This drawing is a very interesting one as showing a transition stage to "tracery imitation," in which, however, the previous mere scribble stage is curiously combined. The only point that shows tracery imitation is the localization of legs and face with eyes, nose and mouth. Each of these features itself, is still in the scribble stage. The tangle of lines over the legs is not in any case to be interpreted as shading, but merely as the same sort of undifferentiated scribble that in the case of the previous drawing made up the whole picture at 2 yr. 3 mo.

III. *At 3 yr. 5 mo.* (Fig. 4). This is an attempt to draw "mamma." The parts drawn and named are: Mamma's two hands composed of five fingers, the legs (called by the child, "feet"), the shoes, the two eyes, the nose, the mouth, the two cheeks (called by her, the two "faces"), and the hair. Compared with the previous picture it shows the interesting elimination of most of the mere scribble, but still there is nothing more than localization (or "motor description") of the chief parts by means of pencil marks which show no attempt whatever at outline. Beside the mere location of features, some endeavor is made to indicate relative lengths of parts, e. g., of

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<sup>1</sup> See also Goldscheider, *Archiv für Psychiatrie* XXIV, 1892, p. 503, for a prior treatment.

the trunk and extremities. The number of fingers on the hands seems also to have been intentional, although there are only four on the left hand.

IV. *At 4 yr. 3 mo.* (Fig. 5). During the summer and autumn of 1895 the child's attention was so far taken up with other things, long journeys, sickness in the family, etc., that, so far as I know, she did not draw any more until Christmas week, 1895. This fourth attempt represents "a woman." The important new point is that the head is now drawn in outline. Neck and body have also the suggestion of outline. Right and left eyes were pointed out by the child, also right and left ears, mouth, hands, and feet.

V. *At 4 yr. 6 mo.* (Fig. 6). Here we see a great improvement in simplicity and distinctness of all the parts and consequently of neatness. Scribble is entirely eliminated except a little in the hands and feet, and a slight touch of it about the nose and mouth. This gradual reduction of the aimless tangle of the first drawing to the few, bold, telling lines of the fifth, is very instructive. It probably corresponds to a clarification of the mental image in the child's mind by a gradually greater discrimination on her part between the motor elements (resulting outwardly in mere scribble) and the strictly visual elements (producing lines definitely suggestive of form). The human figure being now reduced to its simplest expression in lines, the succeeding stages are the history of the gradual addition of detail after detail to the features and to the dress.

VI. *At 4 yr. 7 mo.* (Fig. 7). Here the head was drawn first, then the two eyes and mouth, next the two legs and feet, and lastly the upper extremities with the elbow, arm, and hand indicated as their three parts. We see the remnants of scribble still remaining in the markings for the elbows, hands and feet. I am inclined to attach a good deal of importance to the complete clarification of the mental image by the entire elimination of all motor elements from the visual image; and nothing seems so well calculated to secure this separation, nor so reliable a symptom that it is accomplished, as when we find a child's drawing entirely free from scribble, and every line instinct with meaning. If you will examine the picture of a "house on fire" (Fig. 15), by Tom (a Buffalo boy a little over 5 yr. old), you will find that there is not in the whole drawing a single meaningless line. For this reason, if for no other, it would seem objectionable to introduce shading into early drawing, on account of its fostering the early tendency to scribble unmeaning lines. The child's difficulty at this period seems to be the struggle to subordinate the motor elements to the visual elements. Only when the latter are in control of the former can the child really draw. I have on my table a pile of drawings

made by eighth grade pupils, most of whom have been led back into their scribble stage by injudicious use of shading. The sketches are full of unmeaning touches that give an artificial, dead look to the figures. They have not half the expression of "*cross Clara and her Nurse*" by 4 yr. old Helen (Fig. 13).

VII. *At 4 yr. 8 mo.* This drawing (Fig. 8) was made at request, but without any suggestion except of the buttons on the breast. The sequence in drawing was: head with eyes, left arm with hand, right arm with hand, right leg and foot, left leg and foot. The mother thereupon tried to see if the child noticed the absence of the body-outline, and asked her "where the chest-part was, where a man's coat buttoned." Lillian pointed to the empty space between the head and legs, and she seemed quite satisfied with the way it was represented. But the word "buttoned" led her immediately to draw the buttons.

VIII. *At 4 yr. 8 mo.* (Fig. 9). This was made a few moments after the preceding one. The order of drawing the parts was: head-outline, eyes, right arm, left arm, right leg and foot, left leg and foot, buttons on body-part, right hand, left hand, mouth, beard, nose, hair, right ear and left ear. Before she put on the mouth and other features, she stopped and her mother asked "if eyes were her only features," whereupon she added those indicated. The shape of the head is the greatest improvement. The eyes, too, have developed from dots into outlines. The disproportionate length of the arms compared with the length of the legs is probably of no great significance. The lower extremities would possibly have been longer if there had been room on the paper.

IX. *At 4 yr. 9 mo.* (Fig. 10). This is a drawing "from life" of a man sitting on a sofa, reading a newspaper, his head leaned over to the *right* and resting on his right hand which is propped up on the arm of the sofa. The child was expressly told to draw Mr. F. "exactly as she saw him." As he settled himself on the sofa to pose for her, he laughingly said, "Don't forget my glasses." They are accordingly represented in characteristic child-fashion, — immensely too large in proportion, and giving indeed the chief expression to the figure. The head, it will be noticed, is leaned in the opposite direction from what the model's was and the arms and legs are not shown at all in the position in which they were seen. The sofa showed more to the model's left instead of to his right as drawn. The ears have developed out of the previous scribble of Fig. 5 and 9 and have become clear outlines with a dot inside to represent the ear orifice. The feet have differentiated into heel and foot. The hands are still scribble, and the buttons, so eagerly added in the last two pictures (Fig. 8 and 9), have dropped out to re-appear, however, in the following (Fig. 11). *After the child had finished drawing*

*the man, she realized that he was sitting down on the sofa, and then proceeded to draw it, showing two legs with rollers to them, the pillow at one end, and the carved back above.*

X. *At 4 yr. 9 mo.* When she had finished the previous sketch, her mother asked her, "why she neglected to draw the nose, the watch-chain, and the buttons." This suggestion evidently roused her to put forth more effort and resulted in Fig. 11. The nose has, for the first time, taken on a decidedly strong and clear outline, eye-brows are added over the tops of the nose-glasses, a full beard is drawn in addition to the "goatee" under the mouth, and the watch-chain is diagrammed as a three-branched ornament over the two immense vest buttons. Two little nostrils are misplaced in the upper part of the bridge of the nose. While there are no utterly meaningless lines, the attempt to represent hair, beard and hands, has nevertheless led to the use of scribble lines in which the direction of the lines means nothing. It seems to me that this is just where the child needs help at present. If she were encouraged to indicate the hair, beard, hands and feet by one or two distinct and significant lines, it would probably help her on very greatly and save her from falling back into scribble drawing. There seems to be no set conventionalism about any of the features; all are changing and improving. Even the buttons this time show the holes in the center with threads through them, instead of being mere outlines as before.

The critical point about such a child's development seems to be a possible arrest at some of these low stages of skill. If she should not have practice enough in drawing, or should lack sympathetic suggestion and help from those around her, this line of progress which she has carried on thus far in constant growth of representative power would simply stop. The fact that nothing has become stereotyped, that every feature is changing from month to month, that a word of suggestion immediately prompts the addition of many new features, that scribble is reduced to a minimum,—all of these indicate, I think, that the child is in the midst of a real, healthy, normal plastic development of her drawing power. The development of animal forms goes parallel with that of the human figure, as can be seen from the two drawings of cats (Fig. 40 and 41), one made at 4 yr. 3 mo. and the other at 4 yr. 8 mo. In the latter drawing the outline of the head has appeared and the animal has four legs instead of two. Habit, that great arrester of development, is very apt to harden some of these childish stages into a fixed conventional form (cf. Fig. 23, 24, 25, 26 by a girl who draws all her trees in this style.) Sully thinks the rougher and less sophisticated class of children are most prone to settle down into some habitual way of drawing the human face and figure. Rooper,

following Passy, seems to think the opposite is true, and is therefore in favor of purely geometrical drawing at first. O'Shea thinks that it is natural for all normal children to use a "system of symbols."

After the habit is formed, however, it is difficult to start up the line of development again. Sully tells of children who, at this period, on being set to drawing horizontal and vertical lines in school, *à la* the usual drawing course, began to draw square-headed human figures also. In many of the kindergarten drawings that have been sent in, I have been struck with the angular style of the features, as if the children had carried over to their free-hand drawing the wooden effects of stick-laying, drawing on square-ruled paper, and constructing trees and umbrellas out of squares and triangles. Cf., e. g., Fig. 20, 22, 28, 35, 36. Ruskin says his pupils "would either draw things mechanically and symmetrically altogether or else they would dash and scribble for effect without obedience to law of any kind." Yet some drawing teachers think it the acme of pedagogic skill to make use of geometric shapes, e. g., a cylinder, to enable children to draw trunks of trees, lighthouses, sea-anemones, etc. Compare again Tom's "House on Fire" (Fig. 15, and you will see that there is not a straight line in the whole of it, nor could you improve a single line by making it straight. It would take all the life and action out of the picture. "A great draughtsman," says Ruskin, "as far as I have observed can draw every line but a straight line."<sup>1</sup>

From another set of three hundred drawings made by a little girl, Helen S., in her fourth, fifth, and sixth years, I have selected three very characteristic sketches. This child has had much more practice than the preceding one. At 3 yr. 4 mo. she is far ahead of what Lillian was at 4 yr. 8 mo., but at 5 yr. 2 mo. her skill with the pencil does not seem greater than in her earliest drawing, notwithstanding the greater number of details represented and the increased interest in the use of the pencil.

A. At 3 yr. 4 mo. In this drawing (Fig. 12), representing "Little Girls singing, 'Ring around Roses,'" meaningless scribble has already been eliminated and this is its chief merit. I have no record of any of her drawings before she was 3 yr. 3 mo. At that time, less than four weeks before this was drawn, her pictures were almost indistinguishable scribble with nothing showing clearly except the head-outline with eyes, nose and mouth. The rapid advance of the succeeding month was,

<sup>1</sup> Cf. GUIDO HAUCK, *Die subjective Perspektive und die horizontalen Curvaturen des dorischen Stils*, in which he demonstrates that the eye sees straight lines curved, and he represents them thus in pictures. The curves in the roof of Tom's house, Fig. 15, are a little overdone, but still are in the right direction.

however, not accompanied by increased simplicity in the delineation.

B. *At 4 yr.* The picture of "Cross Clara and her Nurse" (Fig. 13) is admirable for its facial expression and the attitude of body and position of arms, hands and feet. The head-dress of the nurse is pretty well indicated, and, from her big upper lip, one would naturally infer her nationality. Clara looks up in wondering innocence, and the gesture of her up-raised arms seems to say "There, now, Bridget, there is no use of your talking. I shall go my way just the same." The position given the feet would seem to indicate that she thereupon skipped away leaving her nurse pointing at her with the right hand and resting on her right foot, while looking up to heaven beseechingly. The shape of the nurse's feet is poor, but, taken in connection with her general posture, their position is quite remarkable, giving very strikingly the appearance of standing on the right foot. It seems scarcely possible that a child of four years could have drawn such a picture without a copy to work from.<sup>1</sup>

There are, on the other hand, plain instances here of scribble for effect in the case of the mouth in both figures, and in the nurse's left hand. One cannot quite make out whether it is merely her hand or whether she has a reticule carrying.

C. *At 5 yr. 2 mo.* The picture of "Cinderella, The Prince and A Lady" (Fig. 14), is much inferior to the preceding. Observe the monotonous uniformity of expression in the features of the three persons. One can easily recognize it, nevertheless, as the work of an older child by reason of the much greater accumulation of details, e. g., hair, nose, chin, buttons, and star-spangles on the dress, heels on the shoe, etc. But the most unfortunate characteristic is the plainly marked tendency to the mere repetition of the same shaped heads, same shaped noses, etc.; and, connected with this tendency, the general lack of expressiveness. In striking contrast with "Cross Clara and her Nurse," the figures here have as dead and wooden, dummy features and postures as the crudest rag-dolls. The evident loss of skill and lack of painstaking effort are perhaps due to this settling down into a sort of conventional and habitual form. All the studies of children's drawings agree, I believe, in attaching great importance to the evil effect of this conventionalization tendency. And yet it is just here that the usual drawing course for kindergarten and primary school, throws its main influence in the direction of developing to an extraordinary extent this very evil, by its conventional schematizations, its enormous exagger-

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<sup>1</sup> Miss Williams has since confirmed the above, and is almost sure her little niece did have a "copy" for this picture, although not for the others.

ation of the importance of symmetry, and the too early training it gives in geometrical design.

In the first number of Prof. Barnes's new *Studies in Education* is a very interesting series of six drawings selected from over 15,218 scenes drawn by children of ages from two to eighteen, and arranged to illustrate what the author believes are the stages of "The Pictorial Evolution of a Man." "With a child of two years, the picture of a boy is a mere scrawl (1). The first part of his anatomy to emerge clearly is his circular head with eyes and mouth (2). Arms and legs sprout forth from his head (3), and then a line joining the two legs develops a body (4). With all very young children the face is drawn full." "Gradually the children change to profiles (6); but in the transition stage (5), many draw a profile outline and fill it in as though it were a full-face outline."

E. Cook (*London Journal of Education*, Dec. '85 and Jan. '86) has an interesting study of children's drawings, under the title of "Art-teaching and Child-nature." He makes out four stages: (1) Freehand scribble with muscle controlling the performance; (2) Mind gets the mastery of muscle and imagination becomes evident; (3) Parts are drawn in better relation and proportion; (4) Child can copy and analyze further, and the parts are seen as composed of elementary lines which can be imitated.

Sully, in his recent "Studies of Childhood," sums up the principal points in the development of drawing power in children as indicating three stages: (1) the stage of vague, formless scribble, (2) that of primitive design, typified in what he calls the lunar scheme of the human face, and (3) that of a more sophisticated treatment of the human figure, as well as of animal forms.

It has also been suggested that the development of drawing should show the same stages as the development of speech, somewhat as in the following table:

| SPEECH. <sup>1</sup>                                                                            | DRAWING.                                                                                                     |
|-------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| I. Automatic cries and reflex or impulsive sounds.                                              | I. Automatic and aimless scribble.                                                                           |
| II. Imitation of sound but without meaning; child babbles back when addressed.                  | II. Scribbling localizations and imitation of movements of other person's hands.                             |
| III. Understands words, but does not yet speak beyond such words as "mamma," "papa," "no," etc. | III. Understands pictures, but does not yet draw beyond the simplest localization of features by scribbling. |

<sup>1</sup> Cf. article on the Learning of Language, *PED. SEM.*, Vol. III, p. 427.

## SPEECH.

IV. Repeats words as mere sounds when they are said to him. (Brief stage and of little importance.)

V. Uses words to express his thoughts.

VI. Studies Grammar and Rhetoric.

## DRAWING.

IV. Copies from others to see how to get the right effect in the use of lines.

V. Picture-writing, illustrated stories, scenes, etc.

VI. Studies technique of drawing; perspective, proportion, shading, etc.

I do not, however, believe that either the above table or any one of the other formulations of stages above referred to brings out with sufficient clearness the central importance of the simplification of the drawings into a very few, telling lines. That, it seems to me, is the goal of the earliest stages, and when it is reached, and all scribble is eliminated, the one greatest danger in all the subsequent period is that of falling back into the use of unmeaning lines. This is the commonest fault with all the older children and so far offsets whatever progress they may have made in other directions, that their drawings are far less suggestive of what Lange<sup>1</sup> calls "artistic illusion" than are those of the younger children. The geometrical, straight lined simplifications, such as many of the drawing books contain, give less than no "artistic illusion," and are simply a perversion of some of the principles of mechanical drawing into a course in free-hand to the extreme detriment of the latter.

I was very glad, in looking over a recent article by Miss Josephine C. Locke, on "Story Telling with the Scissors,"<sup>2</sup> to find that she brings this point out as the most important result of the silhouette-cutting. By the use of scissors in cutting out outlines, the most inveterate scribbler may be reached and, perhaps, saved. The kindergarten device of string-laying may also be used to the same purpose.

### WHAT IS THE CHILD'S MENTAL ATTITUDE TOWARD DRAWING?

It is a fact familiar to every teacher of little children, but rediscovered and appropriately emphasized by recent studies of children's drawings,<sup>3</sup> that children naturally draw "out of their

<sup>1</sup> KONRAD LANGE, *Die künstlerische Erziehung der deutschen Jugend*, Darmstadt, 1896.

<sup>2</sup> Primary Education, June, 1896.

<sup>3</sup> E. g., *A. B. Clark*, Leland Stanford, Jr., University; *M. V. O'Shea*, Proceedings N. E. A., 1894; *T. G. Rooper*, Drawing in Primary Schools, Kellogg & Co., 1894; *Wm. A. Mason*, The Psychology of Object Drawing, Education, Boston, Oct., 1894; *Jas. Sully*, Studies of Childhood, N. Y., 1896; and many others.

own heads" and not "from the object," even when it is put before them and they are expressly told to draw "what they see" (e. g., Fig. 10). They very sensibly prefer to draw absent objects; for if the object is present, why, indeed, should it be represented? Perhaps, too, in forcing early drawing "from the object" we are really making it harder for the child to arrive at the necessary preliminary stage of simplicity in outlining (p. 81 and p. 87). We can at least conceive that it may be easier to draw in a few bold strokes a characteristic sketch "from memory," than to do it with the object to look at.

Clark tested 247 children of different ages by putting before them an apple with a hat-pin stuck through it horizontally and then asking them to make a drawing of it. All the six-year-olds drew the pin clear across the apple. O'Shea, Rooper, Passy, and others have tested their pupils by themselves posing as models for the children. No matter how the models sat, the little ones always drew full-face views. The child aims not at drawing a picture, an imitative representation of something he could see, but rather at giving a linear description of what he knows about the thing (Sully). He makes a "knowledge drawing,"<sup>1</sup> as opposed to the drawing of the visual sense impression (Mason), a subjective rather than an objective picture. Instead of drawing a single view, he reproduces some of the characteristics of the composite image (associated with the name of the object as its meaning), made up from many different views and indeed from different senses. He makes, in short, just such a description in drawing, as he would make in words (Ricci). Hence his drawings are diaphanous, and lack proportion and perspective. That which he has his attention on at any time he is likely to draw large and distinct. Details are therefore often exaggerated and his drawings become caricatures. They are loosely patched together, incoherent and fragmentary, just as children's stories also are. Their drawings are "form-synonyms for their thoughts," in the earliest stages merely "an extension of gesture" (Mrs. Maitland), drawings in motor terms.<sup>2</sup>

Most of those who have written on the subject seem too prone to speak of the drawings as conventional and generic. They become so, only when normal development is checked by the

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<sup>1</sup> I can well remember thinking of a horse as having only one front leg, and I wondered how it ever managed to hop along in front, but it never occurred to me at that time to look at a horse and see how it really was.

<sup>2</sup> Cf. *Froebel*, *Education of Man*, p. 77. "Here flows a brook," and, saying this, the child makes a mark indicating the course of a brook. "Here comes a bird flying," he says, and thereupon draws in the direction of the supposed flight a winding line.

formation of a habit. Normally children's drawings are schematic, schemagraphic, or diagrammatic, but not conventional. Perhaps the symbolism is a sign of arrested development of the representative power, instead of being a feature to be cultivated. The corresponding good characteristic, very carefully to be distinguished from mere symbolism, is shown in the tendency to few, bold, well-chosen, significant lines used with telling effect to suggest action and indicate expression. This is what Lange calls "artistic illusion," and is similar, perhaps, to the illusions of "crystal vision." The subject sees in imagination what is only faintly suggested or hinted at in the object. The child (and indeed an adult too) looks *through* the drawing at an imaginary image. Thus artistic drawings can be truly enjoyed and appreciated only by artistic eyes.

One striking feature of nearly all the very best drawings is the tendency to long, firm, continuous lines, as shown in Fig. 12, 13, 14, 15, 18, and 19. In figure 18, for example, the pencil has been taken off not more than fourteen or fifteen times in all, except for the shading of the hair and the four dots for eyes, nose and mouth. Each feather in the hat was made by a single continuous line without removing the pencil from the paper. The poor drawers touch up their outlines with a great many uncertain, short lines that tend to degenerate into aimless scribble. In Fig. 21 there are, by actual count, more than half as many lines as in Fig. 15 (100 in former to 180 in latter). There are, however, also other than visual elements in that mental "copy" from which our young artists draw. The early formless scribble is motor uncontrolled by any clearly defined visual form image. Many early drawings show a very interesting stage in which localization of the parts of the object is very definite but absolutely no outline or drawing proper is attempted. Many children, too, draw sounds and other invisible things such as the wind.

Secondly, the little child draws from his own consciousness, and hence puts his own consciousness into the picture. A large proportion of the human figures drawn by children have childish features. (Cf. Fig. 18, 19, and 22, all of which were intended to represent adults.) This, in spite of the fact that rough, irregular, and uncertain pencil marks in unskillful hands are more apt to strike a form suggestive of adult ugliness with its misshapen weather-beaten features than to hit on just that lovely, plump, chubby outline characteristic of childhood. When drawing an animal form the human features often take the place of the appropriate ones. (E. g., Fig. 20, 21, 22, and 36. Also other instances in Ricci, Sully, and indeed in almost every collection of children's drawings.)

Perhaps in this subjective prominence of parts of the child's

anatomy in his view of himself, we can find some reason for the order in which the parts of the body come into representation in such a series as in Fig. 1-11. Perhaps he feels, as we adults certainly do, that his head is the seat of his own mind, and as he looks out of his eyes at his own body he certainly gets a nearly front view of himself and never a profile view. He sees no neck; the arms appear joined to the head and no shoulders are visible. They are frequently extended, sometimes horizontally, their appearance giving "an air of self-proclamation, as if they said in their gesture-language, 'Here I am'" (Sully). (Cf. Fig. 6, 7, 8, 9, 18, 19, 22, and 39.) The feet are at first drawn as if with toes, and only later with rounded forms suggestive of shoes. The diaphanous forms, also (Fig. 16 and 17), strongly suggest elements of the child's consciousness of his own body inside his clothes. Oftentimes, indeed, the young artist announces the portrait as his own, e. g., "Here's Donald smiling at you" (Fig. 32), and "Here's 'boy' pushing his wheelbarrow" (Fig. 33). Perhaps the elimination of this selfish consciousness of his own person may be turned to account by making drawing a means of broadening the child's sympathies and interests, just as indeed doll-play has already been recognized as possessing pedagogical value in developing altruism, affection, companionableness, and, in general, the social and domestic sympathies.

Exactly what was in the minds of the children who drew the phantastic forms in Fig. 29, 30, 31, and 35, it is impossible to say. They may be mere plays with imaginary features. That children of this age (6-8 years), however, can enjoy caricature is undoubtedly true.

*Children's appreciation of pictures.* Miss Shinn reports her niece as "liking to look at pictures" as early as when she was four months old. At six months Ruth confused plane and solid forms. At 14 mos. she recognized a cow and chickens in pictures, and conversely at three years she recognized a real monkey and a real elephant from having seen them in pictures. "In all her behavior toward pictures and other representations," says Miss Shinn, "I was chiefly struck first by the ease with which the general purport of such things was accepted, after it had once dawned on her,—the primitive stage of development, so to speak, at which pictures were comprehensible and interesting; and next by the extent to which outline made up the representation, and the small part played by size, color, or even the shading to imitate solid form."

Mrs. A. H. Putnam, a few years ago, reported some tests<sup>1</sup> intended to show whether little children grasp the idea of form

<sup>1</sup> PED. SEM. II, 331.

best through color or through outline. Ninety-seven kindergarten children were provided with water-color, chalk, colored crayons, slates, paper and pencils, and the sand-table; choice of means of expression was left as free as possible. Eighty-seven, however, drew simply outlines.

Most interesting to children are those pictures that have a story connected with them. One mother writes to me that her little girl is very much interested in the Brownie Books "*when they are read to her*," but the pictures by themselves do not interest her. She took no interest at all in a scrap-book of pictures alone. Strange as it may sound, it is nevertheless true that words seem more suggestive of clear ideas to children at this early age than do pictures. Very characteristic is the childish request, "*Read me this picture.*" They want *words* to suggest ideas, which the picture alone fails to do. This fact is very properly taken advantage of in developing a desire for reading. But the illustrations in children's primers are more apt to be chosen as being "pretty pictures" merely, and scenes from child-life, instead of being, as they ought to be, story-scenes that the child will want to read the explanation of, just as in an art gallery every visitor wants a guide book to tell "what the picture says." In teaching reading all questions of methods sink into utter insignificance before the one essential condition of really wanting to learn to read. Pictures properly chosen will develop the natural desire "to know what the picture says" or, as the children often express it, "to read the picture," and this seems to be one of the natural, wholesome, and properly stimulating ways of beginning reading. It is very different, however, from merely making a picture the text to talk about in the ordinary language lesson, and very different, too, from merely using pictures with which to illustrate the reading lesson. Let me quote from a few children:—

"I was looking at a picture in which Christ was represented as blessing the little children. Lenora (4½ yr.) came and looked at it with much interest for a while. Then she said, 'What does the picture say, Cousin Essie? Do tell me what it says.'"

"Helen (4½ yr.) brought an old picture of Santa Claus to me many times and asked me to tell her what 'that old fellow was saying.' After I told her she would sit in her chair and study the picture, talking to herself about it."

"Addie (4 yr.) would say, 'Tatie, read this one picture.' I would tell her, "yes." She would watch my eyes, and when she found that I was reading on the opposite page (where the print was), she would say, 'No, Tatie, I don't want you to read that over there, but read this one, just this one picture. Now tell me what it says.'" (Miss Williams's collection.)

Thus can drawing naturally and beneficially form the transition to reading and writing in the case of the child, just as the

pictographic stage in the race development has preceded and led up to the alphabetic stage.

### DRAWING AS A TEST OF THE CONTENTS OF CHILDREN'S MINDS.

Mrs. Maitland begins a recent article with the statement that "children's drawings give us one of the surest ways in which to reach the contents of their minds." Certainly with some children as young as even five or six years drawing is scarcely inferior to language as a means for expressing ideas. I have before me a pile of over two hundred and fifty drawings made by Tom J., between five and six years of age. All of them, including the "House on Fire," Fig. 15, and "Mary Queen of Scots," Fig. 34, were struck off within a little over a year. They show an amazing activity; greater, I should say, by far, than that covered by the usual curriculum of the primary school in any one grade. For Tom it was the healthiest kind of development,—just play. How much more he did I do not know, but here are a few of the topics covered:—

Esquimaux; fort; steam engine; man stealing an arrow; going to set fire to an Indian wigwam; Pilgrim boy crying because his gun burst; the first fight between the Indians and Pilgrims; tomahawks, hatchets, guns and swords; Animal shows, including elephants, giraffe, yak, bear, skunk, etc.; "going to heaven"; Red Indian in full dress and feathers with tomahawk and scalping knife; George Washington and the Indians; several houses on fire, with firemen, engines, hook-and-ladders; street parade; R. R. train; Brownie cannon; Lafayette, Cornwallis and Washington; American gun-boat; a sea-fight; American, British and Chinese ships; fire-place in Colonial Days; a Robbery (drawn in colors); Jack the Giant Killer; great attack of the Brownies on Indians; the fire-engine; Indians attacking Brownies at sea; Chinese Brownie Laundry; the fight of Indians and settlers for the possession of a tree; settlers going to church; Jeff Davis; kites, fish-hooks, ducks, tents, lighthouse, etc.; throwing up earthworks on Dorchester Heights; American Fort; map of Japan; Columbus discovering America; a German band; Fourth-of-July fire; horse and carriage; street cleaner at work; Thanksgiving dinner; cherry tree (in color); "Tom goes splash into the water"; man exercising with dumb-bells; blacksmith at work; man smoking a pipe; "in a balloon"; Noah's Ark (with snakes and quadrupeds); locomotives, trains, and collisions; ferry-boats; man skating; a lot of "fire" scenes; getting plums from a tree; Mary Queen of Scots; a Scotchman; a Scotch bag-pipe; giants; street lamps; a caboose to a freight train; old-fashioned soldiers; climbing mountains; stage-coach; trolley cars; "syrup engine"; people being buried; people knocking down cobwebs; sailing on the French coast; Landing of Columbus; canoe race; men dancing jigs; Santa Maria; flutes; goose in a boat; house in the country; hunters, pirates, etc.; grasshopper; iron foundry; a prince; fights between British and Americans, and between Indians and Americans; a fight between funny people on the stage; a skeleton; Admiral Farragut and his crew in a storm; hunter shooting a wild-cat; a pig rooting; Indians on snow shoes on a hill; following a trail; digging a grave; angels; burning prisoner; French and German officers; "the Highlanders are

brave;" "the Grenadiers are beaten;" French and German war; shooting a chief; Indian war, burning prisoners; Cannibal war with Brownies; Brownie Tower of Babel; Brownies carrying wood to heaven; the Monitor; Iron R. R. Bridge; Decoration Day; Christmas scenes; Tom's electric battle, electric fort, air-machine, etc.; a great lot of various Brownie pictures, etc., etc.

Tom did not go to kindergarten till the latter part of the period covered by these drawings. He has neither brother nor sister, and is almost entirely with his mother who reads to him U. S. history, Rollo Books, etc. He has also been much with an older boy who draws a great deal and with whom Brownies, fools, etc. are favorites.

Compare this "inventory of knowledge" with "the catalogue of ignorance" obtained by examining the children in Berlin, Annaberg, Boston, and Kansas City.<sup>1</sup> This drawing activity served Tom for companionship, broadened his interests and sympathies and perhaps, in part, took the place of doll-play with other children. The fights, burnings, shootings, Indians, collisions and other terrible scenes, probably performed the same office for him, in respect to later wild escapades, that vaccination serves in preventing small-pox. He passed through the mild form on paper, harmlessly, and the infection will not take as severely if a second attack comes. Is not the drawing of such scenes a good, practicable substitute for the more dangerous form of "acting out?" Mr. Small has collected a large number of cases in which children of from three to twelve years have carried out into actual realization such suggestions as came from seeing or hearing of living pictures, wild-west shows, circus, army encampments, robberies, hangings, fires, etc. Drawing furnishes a harmless form for all of these, and gives parents and teachers a reliable means of control over these outcrops of savagery.

Drawing supplements language in tests of the contents of children's minds. Words are often repeated meaninglessly, but when asked to draw, or illustrate the story, these misconceptions are pretty sure to come out, as they did in a certain San Francisco primary school. "The Old Oaken Bucket" had been read to the little tots and then explained to them very carefully, and as busy-work they were asked to copy the first stanza from the blackboard and illustrate it with a drawing. One little girl handed in her verse with several little dots between two of the lines, a circle, half a dozen dots and three buckets. "Lizzie, I don't understand this," said the teacher. "What is that circle?" "Oh, that's the well." "And why have you three buckets?" "One is the old oaken bucket, one is the iron-bound bucket, and the other is the bucket that hung in the

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<sup>1</sup> PRD. SEM. I, p. 139.

well." "Then what are all of those little dots?" "Why, those are the loved spots which my infancy knew."

I have another set of drawings from a third grade in Worcester, in which "Jack and Jill" were similarly treated. One boy drew them as two cats each carrying a pail of water on its back. Most of the sketches show Jack and Jill as twin brothers whom you could not tell apart. They go up to the apex of a very steep hill and draw their pails full of water from a spigot. Some pump the water, others draw it from a well. One little girl drew Jack and Jill themselves as pails of water, with little heads sticking out over the tops of the pails.

Other such sets have been sent illustrating:—"How the Robin got its Red Breast" (Miss Cooke's Nature Myths); "The Fairies and the Shoemaker" (Scudder's Folklore); "Ulysses and the Bag of Winds;" "The Eagle and the Tortoise;" "Johnnie Look-in-the-air;" "The Three Bears;" "Little Robin Red Breast Sat upon a tree, Up Went the Pussy cat, Down went he;" "Santa Claus and the Mouse;" "The Old Woman and her Pig;" "The Line of Golden Light;" "The Story of Thumbling;" "The Lion and the Mouse;" "George Washington and the Cherry Tree;" "The Story of the Pilgrims;" "Mary had a little Lamb;" "Lowell's Story of Rhæcus," etc. All of them show surprising readiness in expressing ideas, and many individual characteristics and misconceptions which would furnish a most valuable means of reaching the children's standpoint. O'Shea has made some attempt to study individualities of character as expressed in children's drawings. He thinks, however, that bright children make logical drawings, and calls it illogical to draw the head, then the body, then one leg, then the other, then dress them with pantaloons and lastly put in the ground for the man to stand on. If I understand him rightly, a logical drawing develops in the order in which the parts themselves evolved or in the order in which they are essential. Ground must be drawn first and the houses, people and so forth, put upon it; the cellar must be dug, and the foundation laid before the house can be drawn; and the roof must be put on last. It is needless to say that no artist that ever was born has drawn that way. The sequence of parts in drawing have nothing whatever to do with logic, nor, indeed, with how the object represented came into being, or with how it is conditioned by surrounding circumstances. On the other hand, a teacher or parent can with great profit study out the misconceptions of fact and the misinterpretations of words in their children's drawings and can thus be in a position to help their pupils out of their mistakes. Such drawings as Fig. 20 will suggest giving their authors less work in balanced forms; such as Fig. 21 show uncertain, doubting nervousness that must be overcome before

any good character can be developed ; such as Fig. 22 show a foundation of order and neatness on which, if knowledge and interest were not wanting, good results could be produced ; such as Fig. 23, 24, 25, 26 show a tendency to formalism that must be checked, if the ability "to draw what one sees" is ever to be gained.

#### WHAT CHILDREN DRAW TO PLEASE THEMSELVES.

Ruskin's words in the opening pages of *The Laws of Fiesole* should sink deep into the heart of every teacher : "The guiding principle of all right, practical labor, and the source of all healthful life energy is,—that your art is to be the place of something that you *love*." Children draw objects that they love, and at first mostly as a substitute for those objects when absent. If the persons or things they are interested in are at hand, they have no incentive to draw them, any more than a lover has to paint the image of his sweetheart while she is sitting beside him. Little children will not potter over pictures when they can have the things themselves.

Mrs. Maitland has tabulated the subjects of 1,570 drawings made by children in the public schools of California and in the Stanford Experimental School. Between 5 and 7 years of age, 45% of all the drawings showed human figures, 23% showed animals, 35% plants and flowers, 32% houses, 40% objects of still life, and only 5% conventional design and 3% ornament. For the ages 8 to 10 years these figures were only slightly changed. But from 14 to 17 years Conventional Design and Ornament rose to 37% and 8% respectively, and human figures, animals, plants and houses, fell to 5%, 10%, 11% and 4% respectively. I have tabulated the subjects of 1,232 spontaneous drawings of children under ten years, and find substantially the same results, but still more marked. Forty-four per cent. of the whole are drawings of human figures, and if I add to these the other drawings, such as story-pictures, interiors of houses, battle scenes, vehicles, etc., in which human figures are parts of the drawings, fully three-fourths of all the pictures contain human beings. Animals and plants are represented by 7% and 3% respectively, story-drawings by 12%, and geometrical figures, ornament and scribble combined, by only 2%.

O'Shea tested his pupils by asking them to draw a chair, table or other familiar object, of which some part was more or less ornamented. They were simply told "to represent the object." With children of five years the ornamentation was never represented. With children of eight, exactly 50% tried to represent it. With persons of 16 years, some of whom had

had a little instruction in drawing, 87% represented the object ornamented.

Children draw by fits and starts. Bayard (4½ yrs.) sometimes spends two or three hours continuously at it, drawing the same object over and over. The other day he brought his mother forty pictures of "me when I was a baby." From another set of one hundred and fifty-three sheets, extending over twenty-three months, fifty-six, or more than one-third of all, were drawn in a single month, while the spell was on. For the next four or five months scarcely any drawing was done at all.

Genuine picture-writing is common enough with small children before they learn to write with letters. Fig. 38 and 39 are by a little girl 5 years old. The first is "a letter to Santa Claus, telling him what she wants," and represents a coach with a dolly in it and a table with dishes on it. She made, however, only one cup, and then said: "He'll know what it means." Fig. 39 is a "little boy going to the store to buy his mamma some potatoes; in his left hand is a wagon, in his right hand a pocket-book." The rebus is a survival of this sort of pictographs.

#### THE COURSE IN DRAWING.

Prof. Barnes found in his study of the drawings of 6,393 children, that the courage to express ideas through drawing increases in California children until they are thirteen or fourteen years old, and then steadily decreases. Other studies on children's drawings, though less statistical and conclusive, have confirmed this point, and it is a matter of common observation by teachers and parents that, in general, little children are freer to express themselves before the self-conscious period is reached. Mr. Henry T. Bailey, in the last Massachusetts Report of the Board of Education ('94-'95), declares that, "if the power to draw is not acquired before the end of the ninth year, it is not acquired in the public schools."

One of my correspondents, a young lady, writes:

"I found one of my *greatest pleasures in drawing*, from when I was *nine years old till I was fourteen*; after that time I was kept busy with other things. At first I drew the *heads of imaginary people*. If the face *suggested* a name, I always called it by that name. . . . I later made the whole figure, having it *very much dressed and entirely out of proportion*. When I was *twelve* I drew other objects, such as *trees, flowers, houses, animals, all associated with some of my picture people*. At *thirteen*, I tried to draw *real objects*, vainly endeavoring to draw our house with the trees around it.

About this time a relation, who acted as my mother, died, and I stopped drawing for awhile. Since then, I have had *no desire to draw*, and I find that *I cannot draw as well now (at 19) with instruction as I could before without it.*"

This seems such a clear, candid description of a perfectly normal case, that I give it in full, italicizing the points that I wish to bring out. With children, drawing is a normal means of expression, coming before writing.<sup>1</sup> Interest in drawing should be early developed by giving children access to an abundance of good pictures, illustrated books, magazines, photographs and plates of great men, great scenes, and great sculptures, paintings, and edifices. These helps are of the utmost importance in all art education and should be in the environment of the child from the beginning. Drawing thus becomes a pleasure to children and they acquire considerable skill without any instruction. Later, however, when they take up the dry, formal, interest-killing "systematic course" in drawing at school, all "desire to draw" leaves them; they fall behind in their practice, lose their skill, and dislike the subject.

The cause of this is suggested in the other italicized parts in the above extract. For, children, as a rule, do not want to be kept drawing straight lines, angles and curves—the A, B, C, of perception, as Pestalozzi called them. One of his assistants, who, like perhaps most of the drawing teachers of to-day, thought that "this art consisted of lines only," Pestalozzi sharply reprimanded, telling him that "Nature gives the child no lines, she only gives things, and lines must be given him, only in order that he may perceive things rightly. *The things must not be taken from him in order that he may see only lines.*" As pointed out above, the things the children like to draw are heads of imaginary people, human figures much dressed up, scenes illustrating stories, pictures of trees, flowers, houses, animals, associated in some way with their actual or imaginary friends. Consider that when left to themselves, three-fourths of all their drawings are human figures with human interests linked with them, and we shall not wonder that when put to drawing straight lines and curves, the drawing lesson has no interest. The same reform in drawing is demanded as has already taken place in reading methods. Thirty years ago the alphabet method was well-nigh universal. The letters were first learned, then their sounds, then the "ā-bē-abs" in a sort of syllabary, and the spelling of words by a sort of cumulative method, after the manner of the "house that Jack built," continued throughout the course. Pestalozzi taught in that

<sup>1</sup> Pestalozzi laid great stress on this point. Drawing requires and develops a universal flexibility of the hand which, however, is ruined by the stiffening of it in particular directions by the uniformly up-and-down movements of writing. Drawing favors the fundamental, free, whole-arm movements, necessary in making long, continuous lines with large and variable sweep; writing leads almost necessarily to little, cramped, accessory, finger movements of narrow range and uniform in direction and height.

way. So, too, he is the originator of the current geometrical method of teaching drawing, which is exactly analogous to the old alphabet method of teaching reading. Both begin with dry, abstract, dissociated elements, analyzed out of the concrete forms by adult logic. The children are condemned to practice on these until by dint of drill their teachers pronounce them fit to use real words and draw actual things. The word-method has changed all of this in reading, and what we need in drawing is as complete a change to a "thing-method." *The thing par excellence for all the lower grades and the kindergarten is the human figure.* The aim should be first to eliminate all scribble and meaningless strokes, reducing the drawing to a few, bold, significant lines. "Try always," says Ruskin, "whenever you look at a form, to see the lines in it which have had power over its past fate, and will have power over its futurity." These are just the lines, as we have already seen, that children naturally and normally tend to use. They are not merely simple outlines, but are lines of force.<sup>1</sup> And we may well ask ourselves whether the natural method by which children draw "out of their own head" is not at first the most conducive to a rapid reduction of the primitive scribble to the few telling strokes that are so full of expression.

With this simplicity of representation, so prominent and desirable a feature in all early drawings of normal children, as a starting point, a natural synthetic course will yet have to be worked out based on a careful study of the gradual introduction of details, shading, and color into children's drawings during the years from seven to fourteen and fifteen.

Far greater individuality and freedom, both in subjects and in methods, must be allowed than is at present the case. The range of subjects must be large, comprising chiefly scenes of human interest, with human figures in action, illustrating episodes in history and literature, events in the children's own lives, local occurrences, fires, parades, circus, menageries,<sup>2</sup>

<sup>1</sup> Page 65 of Augsburg's "Easy Things to Draw" (Kellogg & Co.) shows some diagrammatic examples of the latter. The sketchy outlines given on the other pages suggest what might be done by a great artist in this direction. What can be done to make such outlines wooden, stiff and dead by simply straightening them by the ruler and turning them into geometrical ghosts of things, is shown by almost any illustrated book of Kindergarten work, by Hull's Geometric and Freehand Drawing (Flanagan, Chicago), and by "Das Schiefertafelzeichnen für Schule und Haus" prepared by the teachers' association of Regensburg (Oldenburg's Schulbücherverlag, Leipzig). Frl. Frederiksea of Copenhagen has, on the other hand, an admirable collection of simple, artistic outline sketches in "Den sorte Tavle" (N. C. Rom. Copenhagen), which are well-chosen as to subjects and contain only expressive "lines of power."

<sup>2</sup> In a recent German work (Hirth: Ideen über Zeichenunterricht,

excursions, home life, etc. Mechanical inventions, and working drawings with construction work in paper or wood, may perhaps be found to have their most appropriate time between ten and thirteen, for the purpose of exploiting the inventive interest that crops out at that period. Later work in mechanical drawing is more suitable to trade schools than to public elementary schools.

I feel very much like agreeing with Ruskin when he says : " I do not think it advisable to engage a child in any but the most voluntary practice of art. If it has talent " (and nearly every child will show it has, if only you lead it on to drawing interesting things), " (it will be continually scrawling on what paper it can get ; and should be allowed to scrawl at its own free will, due praise being given for every appearance of care, or truth, in its efforts." No such subjects as drawing, reading, writing, etc., are properly taught in school unless the school-work leads to a great deal of voluntary out-of-school practice. The school-time for these subjects should be short and mainly devoted to suggestive help. Rapid, intuitive, suggestive work is for children always preferable to any worked out, logical, systematic, consciously arranged effort. The former exploits the hereditary " push upward " and gives it the largest scope to make the most of itself, leaving to the latter only the individual advance that the child has to make beyond the point reached by his heredity. If drill comes too early it arrests development. Play is the natural preliminary step to work, partly because it does give a free scope to the spontaneities.<sup>1</sup> Drill, however, is nevertheless necessary with a good many pupils, but it should be concentrated. Just as children have " focal habits " of interest, now very much taken up with roller skates, now with base ball or bicycle, now with learning everything by heart, now with a secret language, so should the drill periods in school concentrate and aim to strike these nascent periods of interest and of mental and muscular development. It is one of the greatest mistakes, involving immense waste of energy, to spread out a routine muscular drill thinly over a long period. Muscular habits are formed by concentrated repetition, and should be drilled on without cessation till

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Munich, 1894) the author very rightly emphasizes the need of drawing *living* things in *motion*, in order to catch the expressive lines of movement and physiognomy. He, too, would make these the subject of representation from the earliest years, and laments that he has never yet seen a boy taking a drawing lesson in a menagerie. Where is there a place that has more interesting objects to draw?

<sup>1</sup>Cf. a fuller discussion of this important point in an article on " A Point of Difference between Race and Individual Development," in the Second Year Book of the National Herbart Society (1896).

thoroughly established. After they are once formed, comparatively little practice is required to keep them up, if it is rightly distributed in time.

Drawing must lend its aid to the other lessons in nature-study, geography, history and literature. It is a means of expression and a method of conveying ideas as much as language is. To refuse to use the material suggested by the other school subjects for practice in drawing is as foolish as to assign "Happiness," "Friendship," etc., as subjects for essays, and refuse to let the pupils write about what they have learned in the other lessons of geography, history, physiology, etc. And yet when such a proposition is made<sup>1</sup> it is met with the objection that drawing has "its own sequence in development," or that the objects suggested by the other subjects of study are "too difficult for little children to draw."

Color, as mere decoration, is not to be combined with drawings made as pictures of things. Indeed all decorative art is best kept separate from representative art. As we have seen, children's drawings show very slight traces of any interest in mere decoration before eleven years of age. How far color-work with the brush should be used with young children is an unsettled question. Some simply dismiss the idea as absurd, because it would make too much smear to be tolerated in school. But a large number of earnest teachers believe that the childish love of painting pictures has something more in it than mere mischief, and think that beside the training in color, the use of the pliable brush gives a finer touch and a more delicate manual training. With these ideas in view, Mrs. Rowland Hill, in England, and Mrs. Ella Goodwin Lunt, in this country, have arranged series of lessons in brush work for the kindergarten and primary schools. The exercises consist of ornamental designs, borders of elliptical dots, and paintings of leaves and flowers, both natural and conventional. Brush work will never be properly taught in school, however, until we have a course that will show us how the child's love of painting soldiers, Indians, horses, houses, etc., in color can be pedagogically utilized. Coloring flowers and painting dots are but little more satisfactory as a course in brushwork than the current model and geometrical drawing is satisfactory as a course in free-hand.

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<sup>1</sup> Cf. Miss. Stoker's suggestive little book on "*Seeing and Doing*" (St. Paul 1895), and McMurry's "Course of Study for the Eight Grades" (Bloomington, Ill., 1895). Supt. Maxwell's review of the latter (*Educational Review*, April, 1896) characterizes the course in drawing there proposed as "a bold challenge to prevailing methods," which he thinks it is beyond his ability to pass judgment upon. He still thinks the "alphabet method" in drawing is better than the "word method."

Prof. Barnes has recently published<sup>1</sup> his paper on color-teaching presented at the Chicago Congress, 1893. He finds that the strong, striking colors, red, blue, and yellow, and sharp contrasts in combination are favorites with children, and that the softer tints and more harmonious combinations are later effects that have to be learned. The early period of loud colors and gaudy ornament cannot be skipped, if the development is to be natural and healthy. Artistic appreciation of color is a matter of slow growth.

It is perhaps unfortunate, but is nevertheless true, that the introduction of drawing and color work into the public school has been almost wholly based on the ground of the industrial value of the training. Hence industrial art, decoration, and mechanical drawing have received an undue place in the course, and have been particularly harmful in the lower grades.

The object of art education in the common schools is to train up a public that will appreciate and enjoy art; not to make artists nor artisans, but to make dilettants, lovers of art and appreciators of culture. Technique, therefore, should not be a prominent feature, and nothing should be allowed for a moment that tends to destroy a natural interest in art, to develop which is the end and not merely the means of all art education in the common elementary schools.

[Since the above is but a report of progress, and as it is proposed the coming year to continue the study of children's drawings and other art expression along these and other lines, parents and teachers interested are requested to communicate with the author and send in any collections of drawings, scissorings, or paintings by children of any age. Beside stating age, sex, nationality and surroundings of the child, brief title or other explanation of pictures should always accompany them. Collections too much prized at home to be permanently parted with, will be gladly accepted on loan and faithfully returned.

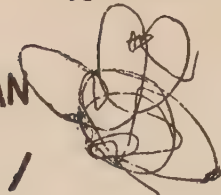
HERMAN T. LUKENS,  
531 Marshall St.,  
Philadelphia, Pa.]

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<sup>1</sup> Kindergarten Magazine, Feb., 1896.

2Yr. 3Mo.

MAN



PICTURE  
OF  
HERSELF

2



3Yr. 4Mo.  
MAN



Legs, Trousers, Face with  
Eyes, Nose, and Mouth

3

3Yr. 5Mo.

Hair-----  
Eyes-----  
Cheeks-----  
Nose-----  
Mouth-----

Mamma's  
Two Hands  
with 5 Fingers

4

Feet-----  
Shoes

4Yr. 6Mo.

Lillian's Name = *Lillian*



6

Eye-----  
Ear-----  
Mouth-----  
Eye 4Yr. 3Mo.  
Ear-----

Hands

5

Feet

4Yr. 7Mo.

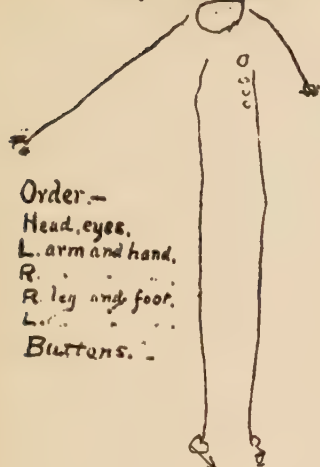
Elbow  
Arm  
Hand

Head was  
drawn first;  
then 2 Eyes;  
2 Legs and  
2 Arms.

Feet

7

4Yr. 8Mo.



Order.-

Head, eyes,  
L. arm and hand,  
R.  
R. leg and foot,  
L.  
Buttons.

8

Head, eyes, 4Yr. 8Mo.

R. arm, L. arm,  
R. leg, L. leg,  
Buttons,  
R. hand, L. hand,  
mouth, beard,  
nose, hair,  
ears



9

4Yr. 9Mo.

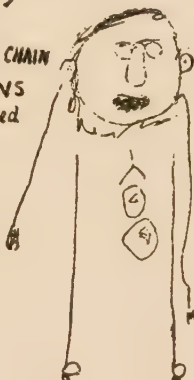
"From Life"  
Man sitting  
on a Sofa



10

From Life 4Yr. 9Mo.

NOSE  
WATCH CHAIN  
BUTTONS  
suggested



11

Little Girls singing "Ring around Roses".

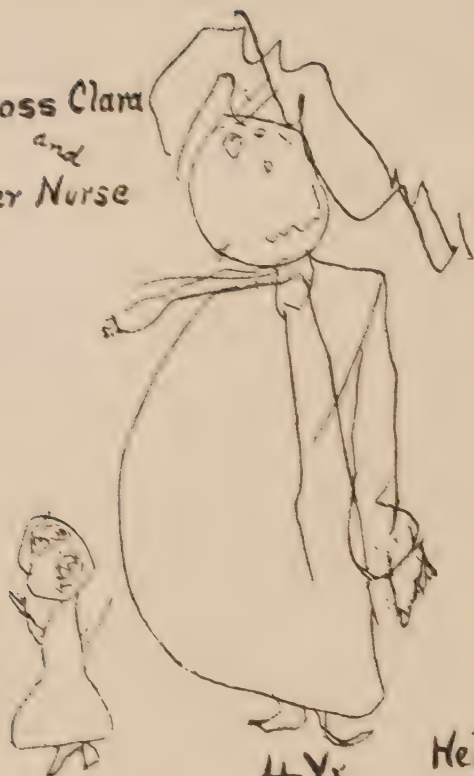


12

3Yr. 4Mo.

Helen L.S.

Cross Clara  
and  
her Nurse



13

4 Yr.

Helen L.S



Cinderella

The Prince

A Lady

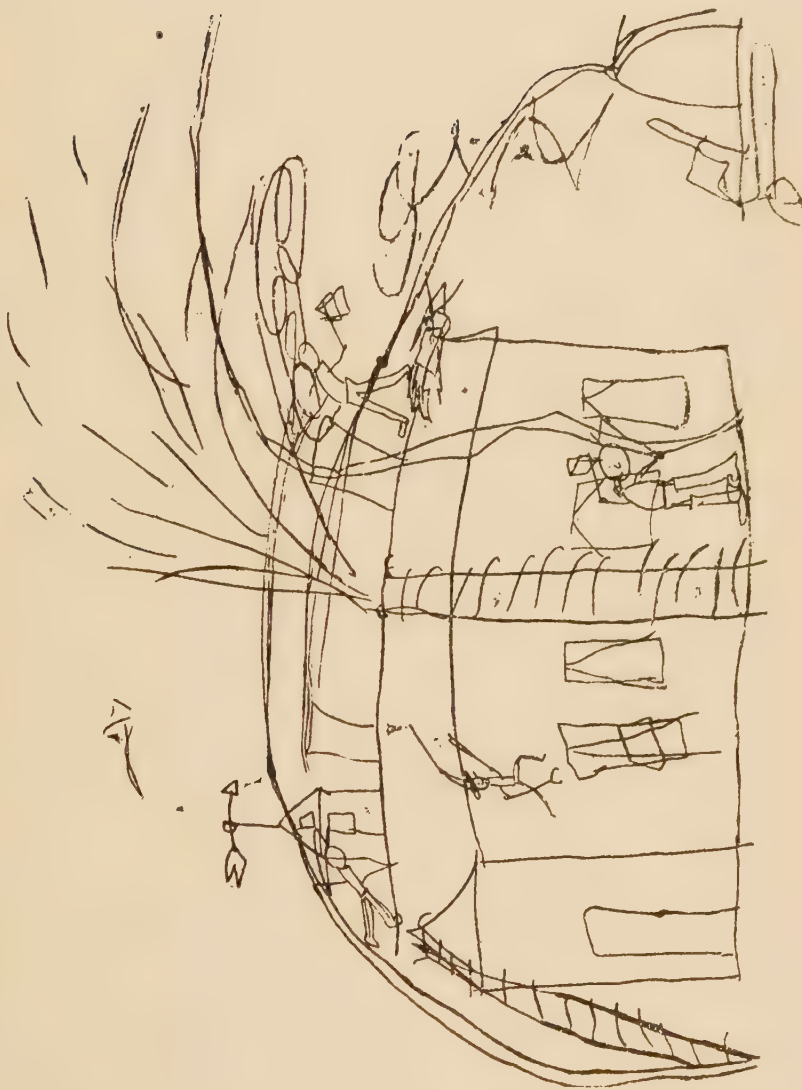
14

5 Yr. 2 Mo.

Helen L.S

House on Fire. - by Tom 5 yr. +

15



6Yr.-7Yr.

A woman



16

A man

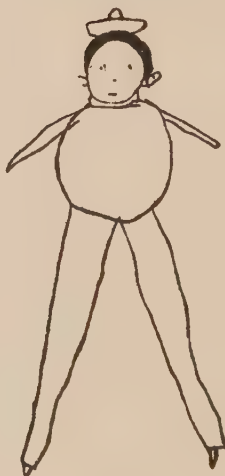


17



18

woman



19

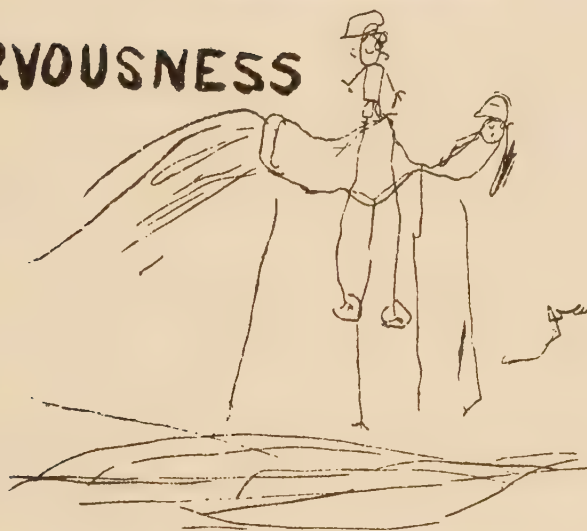
man

# SYMMETRY



20

# NERVOUSNESS

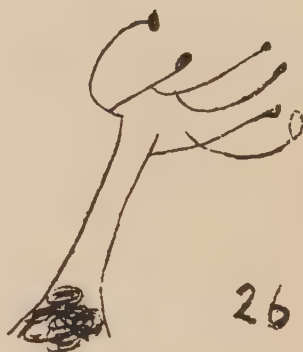
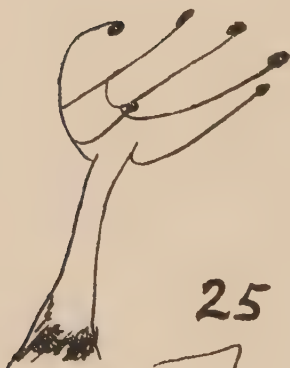
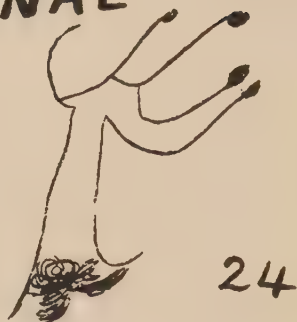
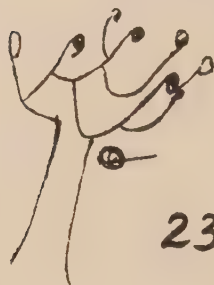
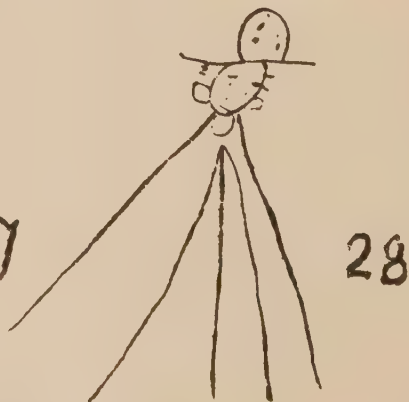


21

# DULL but ORDERLY



22

**CONVENTIONAL****SYMMETRY**



29



30



33



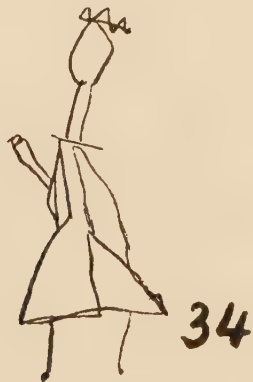
Here's  
Donald  
smiling  
32 at you

3yr. 6mo.

Here is boy  
pushing his  
wheel barrow

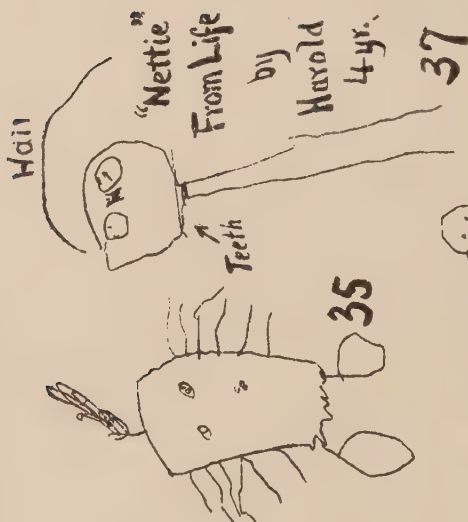


31



34

Mary Queen of Scots  
5yr. + - by Tom



PICTOGRAPHIC

CAT

4 Yr. 3 Mo.

HEAD EAR  
FORELEG  
HINDLEG  
TAIL



"Only one EAR.  
Can't see the other"

40

4 Yr. 8 Mo.

HEAD  
4 LEGS  
TAIL



41

## A PRELIMINARY SKETCH OF THE HISTORY OF CHILD STUDY, FOR THE YEAR ENDING SEPTEMBER, 1896.

By SARA E. WILTSE.

In continuing the preliminary sketch of the external history of the child study movement since the close of my article<sup>1</sup> of a year ago, I am beset with many unexpected difficulties. The work has grown so rapidly, and from so many new centers that to be exhaustive I should have to fill the space at command with the names of new associations that have been formed, during the year under review, the new articles, workers, methods, etc. Although my sketch is only of the external history and although my duties as secretary of the National Association have expired, I am glad at the request of the editor of the Pedagogical Seminary to undertake to re-edit here two partial papers of mine, one read at the Child Study Section of the N. E. A. at Buffalo, and the other at the Summer School at Clark University, both in July, 1896, based upon extensive correspondence with representatives of every section I could reach. My obligations to those who have gathered for me the details upon which nearly everything that follows is based are so numerous that I can only express them here in general terms, although I must mention Professor Reigart, of the Teacher's College, New York, Miss Lillie A. Williams, of the State Normal School, Trenton, N. J., who has been the chief co-worker with Dr. Hall during the year, Miss Millicent W. Shinn, President of the Collegiate Alumnae Association, Superintendent G. E. Johnson, of Andover, Mass., Professor and Mrs. Earl Barnes, of the Leland Stanford University, Mr. Gilman C. Fisher, of the Barnard Club, Providence, R. I., Mr. Luckey, Mr. Patrick, Mr. Louis Galbreath, Dr. Aikins and Principal E. H. Russell. Last and not least to Dr. G. Stanley Hall and the members of the Pedagogical Department of Clark University, especially Drs. Lukens and Allin, and Messrs. Ellis, Scott, Dawson, Bohannon, Small, Lindley, Shaw, Avery, and Mr. Louis N. Wilson, Clerk of the University.

Beginning, as in my former sketch, with Massachusetts, there is still no organization, but most work centers about President Hall. The returns from the fifteen syllabi mentioned last year have been mostly worked up and formed the basis of a one-hour-a-week course given by Dr. Hall at the University throughout the year; and with those from the syllabi of this year made the foundation of his course at the Summer School in July. With his co-laborers Dr. Hall has issued during the year the following additional syllabi: I, Peculiar and Exceptional Children; II, Moral Defects and Perversions; III, The Beginnings of Reading and Writing; IV, Thoughts and Feelings about Old Age, Disease and Death; V, Moral Education; VI, Studies of School Reading Matter; VII, Comparative Study of Courses of Study in the Various Grades; VIII, Early Musical Manifestations; IX, Fancy, Imagination, Reverie; X, Tickling, Fun, Wit, Humor, Laughing; XI, Suggestion and Imitation; XII, Religious Experience; XIII, Kindergarten; XIV, Habits, Instincts, etc., in Animals; XV, Number and Mathematics; XVI, the Only Child in a Family, and a supplementary syllabus on dolls.

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<sup>1</sup> See PEDAGOGICAL SEMINARY, Vol. III, No. 2.

The work of sifting the thousands of returns from these syllabi in a way to extract their psychological and pedagogical value, is well under way. Dr. Hall has had during a part of the year, four persons employed upon this work at his expense, besides the work of the students named above. Reports on nineteen of the syllabi were presented at his lectures at the Clark University Summer School and will be printed in this and later numbers of the *Pedagogical Seminary* and *American Journal of Psychology*.

His greatest need is now a paid secretary to conduct the correspondence with nearly a thousand people in all parts of the country who desire to answer his syllabi; and with others needing direction for the best method of organizing new centers. Unless a salary of twelve or fifteen hundred dollars is speedily forthcoming, many precious possibilities will be lost, as Dr. Hall has already transcended the limits of his own financial ability in this direction. One man should not longer be permitted to do a work so full of usefulness for education at large. His plan, he informs me, is to round up and make a period of this work at the close of another year.

The Clark Summer School, with Child Study as its most unique and central feature, was much larger than ever before; its ninety-six lectures in two weeks, with every afternoon devoted to laboratory practice in testing children and in psychological measurements with instruments, initiated the several hundred workers from thirty-two states and territories into details of method in child study. An important step, long desired, was the formal assurance of co-operation with child study by the kindergartners present, on the day of the school which was devoted to their work. As a result of two conferences in which such prominent leaders took part as Miss Lucy Wheelock, President of the International Kindergarten Union, Mrs. Putnam, Miss Bryan, Miss Payne, Miss Jennie B. Merrill and Miss Zebring, the following resolutions were adopted without a dissenting voice. "Feeling the imperative duty of having in our work as kindergartners and normal teachers, not only a deep reverence and right understanding of Fröbel's philosophy, but recognizing also the present need of a clear view of a true psychology of children, we hereby tender our most sincere thanks to Dr. Hall for offering us an opportunity to co-operate with him in the child study movement through the syllabi and in the conferences of this session of the Clark University Summer School.

"We believe that kindergartners everywhere must realize, if they have not already done so, that scientific child study is not and never has been antagonistic to our vital principles enunciated by Fröbel, the great child student, but we also believe that a better knowledge of genetic psychology is also necessary to ward off any tendency to formalism in the education of little children, which has ever been one of the greatest dangers of the kindergarten system.

"Therefore, in behalf of the kindergartners and training teachers in attendance here we would again thank the president and faculty of Clark University, as well as these ladies who have done so much to make this session full of usefulness as well as enjoyment."

The kindergarten, which is now represented in this country by a better class of workers than in any other land and is more widely supported by public funds than elsewhere, is fast becoming an important part of our national system of education. It is now the only part that has a philosophy, such as it is, which fits and inspires its representatives, and it is already a burning question whether the primary school years shall leaven it or it give its tone to primary grades. It is the natural point of application for child study results so that the above resolutions mark a very important step. Perhaps it would not

be unfortunate if the line between the ultra conservative worshippers of Fröbel's letter, and the progressives who represent his spirit, were clearly drawn, for in no part of the educational field are these differences greater, and child study is the best possible touchstone to develop this natural polarity. Without going so far as to say here that the kindergarten in this country will languish or flourish according as it accepts or rejects child study, as some now say, no one can doubt that, if alive to-day, Fröbel would have been himself foremost among our students of childhood and more severe than any one has ever thought of being in condemning those who make his letter the coffin of his spirit. In view of this situation it is not impossible that the kindergarten day at the Clark Summer School and its results may mark an epoch of great and growing significance for the future of both Fröbelism and child study. For her contribution to this significant tendency I think special credit is due to the President of the International Kindergarten Union, Miss Lucy A. Wheelock.

Dr. Chamberlain, an instructor in Clark University, brought out last winter (by Macmillan & Co.) a large anthropological volume entitled *The Child in Folk Thought*. It is a book of vast erudition, showing from all sources how children have been regarded and treated among the savage races of the world. It is a work which all students of childhood and indeed all parents should read, and is as suggestive as it is full of information. The author is now at work upon another volume showing how childhood has been regarded in the literature of the world.

The Pedagogical Seminary, in the volume ending June, 1896, has some twenty-two child study papers.

In July, 1896, Principal E. H. Russell published the first fruits of his many years of child study in the form of a volume of many hundred typical illustrations of imitation. These are printed without note or comment and classified only by years. It contains a brilliant and suggestive introduction in Mr. Russell's best vein. As the pioneer school in this country, and indeed in the world, to reduce child study to a form both pedagogic for students and valuable for science this volume has peculiar significance and is sure to attract great interest. Each of these illustrations is a psychological nugget and is so numbered that theoretical psychologists of the most opposite schools can cite these instances by number as theologians do proof texts from the Bible. Miss Haskell, who has done the very arduous work of selecting and grouping, deserves great praise. Although this institution has now the misfortune of losing Dr. Bolton, who has done masterly work in co-ordinating its results, the future volumes promised in this series will be looked forward to with great interest. As a year ago, so last summer Principal Russell was the only lecturer on child study at the Summer School of Harvard University, where, despite the indifference of its director and of the philosophical department, a large attendance and great interest was secured. Mr. Russell promises another volume upon *Knowledge as Gained Through Association*.

The Department of Physical Training at Smith College has issued an *Anthropometric table* based on measurements taken on entering college and ten months after.

William Townsend Porter, M. D., instructor at the Harvard Medical School, published an article in the *Educational Review* of February on the *Use of Anthropometrical Measurements in Schools*.

Miss Calkins, Professor at Wellesley, has well sustained the work in child psychology noted in the first part of this sketch.

Perhaps one of the most important, practical movements resulting from child study, and one of the least known, is that of a *Play School*

in Andover conducted by Supt. G. E. Johnson, whose One Thousand Classified Plays and Games, mentioned in the first part of this sketch, was followed by an article in the current number of the Pedagogical Seminary on The Training of Idiots. Supt. Johnson has had a Play School in Andover long enough to satisfy himself that his theory is right. It was not necessary to canvass for pupils; Mr. Johnson simply explained the nature of the school, and said any boy wishing to join the class could do so by calling at his office and filling out a blank. Boys between nine and fourteen years were eligible, and forty boys soon filled this application for admission:

The Andover Play School. Application for Admission. I wish to become a member of the Andover Play School. Name. Age. Residence.

Answer the following questions: 1 What indoor games do you like to play? 2 Which is your favorite? 3 What toy or other thing have you ever made? 4 Name some other things you like to do besides playing games? 5 Can you run a scroll saw? 6 Or a wood lathe? printing press? 7 Can you load and shoot a gun? 8 What do you think you will be when you are a man?

At the close of the school a checker tournament was enjoyed, the boys choosing sides, wearing colors and having leaders. During the term there were evenings devoted to conundrums, puzzles and spelling matches. Parlor magic was tried and any boy allowed to try the trick when he thought he had guessed how it was done. The boys steadily improved in attention, foresight and judgment. Physical training was not omitted. Egg foot ball, wrestling, boxing, target shooting, etc., were practiced. Mr. Johnson planned for a Child Symphony with jews harps, mouth organs, etc., but the time and strength of one man was not equal to this and the other duties of a Superintendent of Schools. It is expected, however, that some of the charitable organizations of Andover will help next year.

Nothing further has been done in Massachusetts towards organization and Boston is now almost the only city of its size that is doing practically nothing for child study, but with so much individual work accomplished in one year we may be content to remain where we have so conservatively seated ourselves—quite behind our western sisters.

*California.* It is a matter of great congratulation that we are to have the almost classic work of Professor Earl Barnes, who has just issued the first of ten Studies in Education, to be published monthly. The first pamphlet contains the editor's introduction, setting forth the object and method of his work. All that he has done has been based on such vast numbers of individuals that none of his conclusions have been reversed. They are also unique, in that by his method teachers and superintendents not only do the work but make the established computations, while, best of all, every problem of his is not only scientific but more immediately practical for schools than that of any other worker. Professor Barnes has not only lectured in every county but in almost every town in California and has everywhere awakened greatest interest, which has been fully sustained. His work in the west also complements that of Dr. Hall in the east, in that the former works from a dominant interest in sociology and the latter more from the biological standpoint. With Miss Schallenberger the children's interests, superstitions, ambitions, etc., are being thoroughly studied, and Professor Barnes's magnificent influence has been widely extended eastward by his Presidency of the Child Study Section of the N. E. A. and by his summer lectures at the University of Chicago. Mrs. Barnes is still his most efficient coadjutor.

The State University of California, under Professor Elmer E. Brown,

is patiently continuing physical tests and giving special attention to ventilation of school houses. Professor Brown's methods are slow but well considered and thorough, aiming at the most fundamental problems. Professor Bailey working there from a more Herbartian standpoint sums up views and pleads for a long continued study of children's instincts and the avoidance of conclusions from isolated facts. Judging from the present attitude of the two great Universities of California to-day it would seem that the final adjustment between the scientific and the pedagogic methods would be reached before we fairly realize that there is a difference between them.

Miss Shinn, who has made a pedagogic tour through the east, has continued observations on her niece, and her work certainly promises to rank with that of Preyer, if, indeed, it is not destined to be on the whole the best of all studies of an individual child. She has vigorously and successfully pushed the work of Child Study among the Collegiate Alumnae during the year. Although the latter seem reluctant to make returns and, Dr. Hall reports, are easily dismayed at the novelty and complexity involved in new work along lines so different from those of the philosophic work they had in college, when they do make records their quality is sometimes of the very best. Why it so often falls short would be an interesting topic for investigation.

Santa Rosa has published two books of stories edited by the public school children, but the suggestion that these would make good reading for children is very questionable on the principle that children's reach far exceeds their grasp, and that they can understand things that are far better than they can produce. The Santa Rosa Reports show how child study has affected the methods of teaching history, and those of the State Council show the effects of child study on the elementary courses of school work in the most interesting way.

*Illinois.* Illinois has made history within the last year so rapidly that her doings will remain luminous through the Illinois Handbook which grows in interest and value with every issue, and The Child Study Monthly even if the historian passes her over with but brief mention. At the meeting of the National Educational Association Colonel Parker represented the work of the Illinois Society of Child Study, which collects data through its three sections, the Northern, Central and Southern. The society has a committee on propaganda which undertakes to reach every teacher and through the teacher the parents who are the backbone of the round tables. Of these round tables there are nearly twenty in the State, each member of which is given some particular line of investigation. The society has held three great Congresses, the last in Chicago, having a four days' session beginning May 13, 1896. There was a daily attendance of from five hundred to three thousand teachers and parents. State and city superintendents reported on work undertaken, and six universities were represented besides a number of normal schools. Most of the work reviewed bore directly upon the practical needs of the schools with valuable suggestions from returns as to the remedy of evils discovered.

Among the opinions most strongly expressed and heartily approved were the following: that children are often almost criminally misunderstood; that one of the strongest desires of children, whose individuality is in any way marked, is to be sympathetically known; that all children have a natural right to be appreciated, and that the misunderstanding of children on the part of adults is lamentable and is beginning to be inexcusable since the search light of scientific child study shows so conclusively that our mistakes are visited upon the children in dwarfed personalities; that the time has come when children must

not only be loved as animals love their offspring, but parental love must no longer be blind if it is to be complete and efficient.

Another strongly accented note of this congress was the reiterated confession in several of the papers that we have taken too narrow views of child life and school work. One essayist is reported to have said that as teachers and parents we have been blind and deaf, have lacked both knowledge and common sense, have taken narrow views of school work because we have taken narrow views of child life. This candid confession of shortcoming on our part is the best of omens for the future.

Another striking and interesting feature of this meeting was the session devoted to the anticipations of child study in Pestalozzi, Fröbel and Herbart.

In an evening address Prof. Dewey made three stages of paidological interest: 1st, the political, when children were educated for a very fixed and clearly defined career in an established political order; 2nd, the social, æsthetic stage of the renaissance, when adults saw in children the lost ideals of their own lives, and loved them not so much for the children's sake as for their own. (This stage has many representatives in art and is still seen in its degenerate form of loving children as puppets); 3rd, the modern scientific study of childhood which does not lessen but increases interest in personality on the principle that the best study follows the deepest interest. Another note of this significant congress was that child study was very effective as a new method of teaching both pedagogy and psychology. Emphasis was placed upon the importance of the teacher's taking the parent's point of view and the parents reciprocating by taking that of the teacher. Mother clubs, such as Miss Marsh has started in Detroit where a hundred parents meet fortnightly at the schoolhouse to discuss food, clothing, home work and discipline, with their bearing upon school life, have resulted in good that has more than local interest, for Superintendent Pettingill reports that this conference of teachers and parents has healed an aggravated case of sectarian animosity in that city. One speaker even regretted that teachers could no longer come into the lives of the families as when they boarded around.

Several normal schools reported that child study had proven a new and valuable bond by which these and other institutions could keep up their connection with graduates. This has been proven by the Collegiate Alumnæ in particular. Very striking and perhaps extreme were the views of one speaker who insisted that the teachers' passion for correct grammatical construction often checked the natural flow of a child's thought, and I must add that I believe this school mania for correct speech is directly responsible for many a case of stammering and stuttering. This gentleman went so far as to advocate some freedom in the use of slang by children and would not condemn a little of what he called legitimate darn language.

Another speaker argued that child study has very strong tendencies to make women teachers more motherly in the school room and tended, to correct the indescribable and disagreeable mannerism of the school ma'am which some women contract for life. What was said about its making all teachers more marriageable instead of unfitting them for home probably has a grain of truth in it.

A prominent clergyman declared that church vestries should be open to kindergartens during the week and that child study, which should be inseparable from all education, was needed to bring church work, so much of which is unpedagogical, upon a natural and healthful basis. In child study he foresaw germs of reconstruction in Sunday School and other church work. It was claimed by another speaker

that eye tests, and possibly ear tests, could be made by the teachers themselves instead of by specialists so that the teacher could at least decide when the aurist or oculist should be consulted; such training being in the power of any one who would devote a few hours to it. This one result of child study, if acted upon, would save not only the eyes but the brain power of many a child who would otherwise become a direct charge to the public. An artist defended the thesis that children had inspired some of the best art in the past, and a musician showed that children's feeling for nature led them spontaneously to the same point of view that many great composers had immortalized in their creations. Another claimed that children were best studied not at rest or at work, but when most intensely and spontaneously active, as at recess and at play, and that out of door games were better than indoor ones for observation; that school work often checks and stunts childhood because teachers have not stood in the very closest relation to children. The universal opinion was that all teachers could easily be trained to aid science by making certain classes of observations and that the making of the directed observations would fit them for an application of the results.

It was agreed that henceforth we must teach children rather than studies. It was observed that the habit of rapid motion, of quick, mental activity and mathematical power often went together. Dr. Christopher, basing his opinion on Ratchford's *Neuroses of Children*, stated that medical men are just beginning to really know about diseases of children and that it is hardly yet understood that diseases of the same kind differ in nearly every respect from what they are in adults.

Mr. Yoder advanced the opinion that biographies of great men are so unreliable on account of the misapprehension of childhood and insisted that they would continue to be fantastic until biographers learned to give due regard to the long period of growth.

A number of speakers urged that child study should always be a part of salvage work among the poor, and one man urged the study of character and temperament as a basis of treatment of the individual, which must be as profoundly different as men are. Dr. Hall gave three addresses at this congress on *Aspects of Child Study* from his standpoint, one or more of which will appear in full in the next volume of the *Proceedings of the Society*.

The selection of Col. Parker, as President of the Child Study Section of the N. E. A. for the next year and the appointment of Dr. Colin A. Scott, an expert from Clark University, to represent child study in the Chicago Normal School, the gradual affiliation of Dr. McMurray and other leading Herbartians with the movement, the surprising growth of Dr. Krohn's *Child Study Monthly*, Dr. Dewey's new model school, based largely upon child study, the fact that Drs. Thurber and McMurray are to co-operate with him at the University of Chicago in extending the movement; the amazing interest and enthusiasm already aroused—these and many other influences combine to place this State still more in the van as the most active center of propaganda, and of the most efficient organization in the country.

*New York.* The work of Child Study in New York is largely done through the Department of Education. Such State adoption of Child Study is unique and gives more force to the annual reports than if they were admitted by courtesy. May the day be close at hand when every State report has its Department of Child Study as the Forty-Second one of New York, under the superintendence of Hon. Charles Skinner, has.

Mr. Charles H. Thurber at the close of his *Hints on Child Study*, Document No. 1, unconsciously admits that even school teachers are

but children of a larger growth, for he says that the names of teachers in the State who are helping in this work will be published as an honor list in the annual report. Mr. Thurber followed a study of Children's Fears and Superstitions by one of their Hopes. This latter paper makes a very interesting official document, and shows the age at which the various occupations appeal most strongly to childhood; for instance, after nine, the number of boys who want to be soldiers rapidly increases; at twelve and thirteen the millinery business springs into great prominence with girls, etc. Superintendent Skinner reviews this study in his report, summing up its value in the following terse way: This study of children may result in bringing to teachers a more practical knowledge of psychology, and later on, when we have passed the elementary stages of this work, there will doubtless come that which has undisputed scientific value. The Buffalo School of Pedagogy has a child study department, Miss Ida C. Bender being the instructor. A mother's club, known as the Highland Park Mother's Club, was organized in 1895.

In Utica, Mr. George Griffith has issued blanks for teachers' study of children's emotions, reasoning, imagination, memory and attention. The Mother's Club of Buffalo contributes Suggestions for Study of Individual Children especially as to Formation of Habits, Fatigue, Keeness of Senses and Physical Characteristics. These suggestions are published in the Transactions of the Illinois Society for Child Study, Vol. 1, No. 4. The Teacher's College of New York has a well-defined course of child study, Miss Zebring, of the Collegiate Alumnae, having a strong influence there, which she uses for the advancement of this study among teachers who are yet inclined even among college graduates to think the book more important than the child. Miss Anna K. Eggleston, who conducts Institutes throughout the State, has been studying the children two years and has the needs of country children so close to her heart that one feels as if she were a kind of Providence in that too neglected part of the school life of the world.

At the N. E. A. meeting in July, at Buffalo, the first session of the Child Study Section filled the largest church in town with an overflow meeting, where the papers were repeated. The next day the large Music Hall, seating four thousand people, was crowded except some seats in the back part of the gallery. A long and successful programme had been provided by President Earl Barnes, and at the close Professor Bryan, of Indiana, Professor Thurber, of Chicago University, and Professor Wolfe, of Nebraska, were appointed a committee to effect an interstate organization. The fact that State Superintendent Skinner is to be President at the next N. E. A. insures at last a man in that position who has not only heard of child study but thinks well of it. The section has grown in three years to be far larger than any other, and that without a sign of favor from the ultra conservative board of control of the N. E. A. It was allowed no place upon the programme of the general session and most of the conservative leaders, old and young, are on record against it. Indeed it has now come to represent the new as opposed to the old in education, and the difference between the N. E. A. machine and the large group of vigorous young men assembled at the close of the last section meeting to take counsel and form plans, represent in a clear cut way nearly all the issues at present pending in education between the conservative and progressive forces, and between the past and the future. The external organization of the N. E. A. has vastly improved within recent years but its internal quality lags strangely behind the present state of the most advanced pedagogy. Old leaders with effete ideas are still allowed to take the time of the association to justify or modify the errors of their youth. The N. E. A.

does not see that something far transcending the reports of the Committees of Ten and Fifteen is at the door and that it has now the greatest opportunity in its history to resoul itself by a new policy which instead of ignoring child study should adopt it by a large appropriation from its funds, to be placed without restriction in the hands of those who could best use it, with no conditions except that its results should be printed in the Proceedings. With such things as are now possible in the way of making education both more professional and more scientific, it seems to the writer nothing less than a shame to education and a sin against childhood to waste the time and deaden the interest of vast audiences with the ponderous platitudes or polemics of educational laymen and pedagogic phrase makers. Nothing would lift the character of these great meetings like adopting the simple methods of scientific associations where the best places on the programme are given to those who have added most during the year to the sum of the world's knowledge in the field and those who have boomlets or represent geographical sections, official stations, friends of officers are rigidly excluded; merit, matter and quality being the sole considerations.

The new school of pedagogy at Buffalo, led by Professor McMurray, began immediately after the session of the N. E. A. a two week's summer school, modelled almost entirely on the plan of Clark University, Professor James representing psychology and Professor O'Shea child study.

*Iowa.* The last circular sent out by State Superintendent Sabin in Iowa shows that the Iowa Society for Child Study has followed its first outline of work and has made and proved the need of eye and ear tests for every child that enters the public schools. Superintendent Kratz has directed a study of the characteristics of the best teacher as recognized by children, the report and results of which are published in the last number of the Pedagogical Seminary.

The sixth study is one of children's preferences. Superintendent Kratz seems a bit depressed by the wail of dissatisfaction from girls who universally hate dish-washing, and seems to think it bodes some ill for the future home, but I fancy further study will place this aversion to dish-washing among the things that girls suffer and outgrow, from generation to generation. When I suffered most from this bane of a girl's life my mother helped me over the difficulty by saying that all girls hated it for a time; she had hated it herself when she was a girl but grew to like it by doing it well and so would I. I perfectly remember my incredulity, but to look at it as a phase of girl life which would pass with the fashion of my dress was a direct help as it ought to be to any healthy minded girl. As we study the children I am sure we shall grow optimistic because they are so much more amenable and reasonable than we have thought them.

In the State University many tests, both physical and mental, have been made upon children between the ages of six and twenty-one years. The nature and results of these tests will be published as soon as they are completed. Three hours a week are devoted to lectures on child study and related subjects. Extension lectures upon the subject have also been given by G. W. A. Patrick in various parts of the State.

*Pennsylvania.* The University of Pennsylvania offers a course in Experimental Child Psychology. A Summer School of the University shows the usual time devoted to child study topics although Dr. Witmer does not allow the subject to be mentioned by any such dilettante and undignified term, and when we enter the Philadelphia University we must leave our modest Child Study outside and apply ourselves to Child Psychology. The prospectus of the work at this University indicates that much of the old psychology is included under the term

of child psychology and that as yet we have little in the way of new results from this center.

Miss Mackenzie, Superintendent of Kindergartens in Philadelphia, has made returns on the Kindergarten Syllabus mentioned elsewhere.

Miss Marot reports a Mother Play class which makes an attempt to fit the games and songs of Fröbel to the needs of the children as observed by mothers and kindergartners engaged in study of children, actually before or rather with them from day to day. Miss Marot sent to Professor Royce a report of play with a pasteboard dog doll which it is hoped we may see. Miss Marot uses some of Mr. Barnes' questions, Pres. Hall's, Principal Russell's and her own. Mr. Allen, of the Institute for the Blind, is experimenting in physical psychology upon blind children in Philadelphia.

Superintendent Thomas Scott Lowden, of Greenville, has a valuable thesis on the First Half Year of an Infant's Life, which, as far as it goes, is perhaps of more value to Americans than Preyer's or Perez's notes because of the influence of heredity and different environment.

Kindergartners especially should familiarize themselves with this study because it is the record of a father who lived with his child several hours each day for six months; as he says, from its first cry. This thesis touches upon movements, seeing, hearing, attention, emotions of joy, sorrow, anger and the will, as indicated in the first month.

*New Jersey.* In this State, Trenton Normal School and Miss Lillie A. Williams still make the center of work. Miss Williams may be quoted more profitably than reported. She writes me: "We have continued general observation following our modified form of Principal Russell's plan. Each pupil keeps a book in which she records her observations on children. By the end of the year each student has collected several hundred observations classified according to Principal Russell's blanks. My idea is to continue individual study during the school career of these children, thus in time having a life book of each, which ought to be of incalculable value to any teacher under whose instruction these children come. My pupils have made several tests for deafness, color blindness, and other eye defects, as well as work in testing power with other senses. Several child vocabularies have been collected and some investigations made concerning the time of day that pupils work best. Five thousand reports have been sent to President Hall upon his syllabi. I feel that the students have been led to interest in and love of children, and have acquired a habit of observing them which will last through life, as well as formed an abiding interest in genetic psychology. I have spoken seven times in different parts of the State on Child Study, always to deeply interested auditors."

The Principal of the New Jersey State Normal School deserves the greatest credit for his steadfast patronage and support of Miss Williams's work which has made this institution so widely and favorably known. This support on his part, if continued, will make the school historic as the source of by far the best as well as most copious data for the new genetic psychology.

Prof. J. Mark Baldwin, of Princeton, has issued a paper on Child Study Applied to Education, which is undoubtedly based upon his own studies, he having sent out a syllabus through the same medium which publishes his article, viz., The Illinois Handbook. His promised volume of Interpretations is still in the future.

*Connecticut.* It is a good omen that Miss Hunt is studying so-called dull children, and that even forty teachers out of seven hundred have responded to her appeal for such study. When we succeed in any city or State in getting the rights of the so-called dull children recognized

by school boards, and proper appropriations for their instruction, we may cry with Simeon of old "now lettest thou thy servant depart in peace." The forty teachers who responded to Miss Hunt's appeal should have their names placed on a national scroll of honor. Professor Scripture has continued work along the lines indicated in my previous report. President Hall has lectured three times within the year at New Haven upon child study.

*Michigan.* Michigan has begun child study in a business-like way with the immediate sympathy and co-operation of the Superintendent of Public Instruction, who writes the introduction to the first Manual of Child Study sent out by the Department of Public Instruction of that State. Perhaps no organization for study of children so soon secured the help of the mothers of the children as this one in Michigan. The various syllabi used by the association are printed in the Michigan Manual of Child Study. Miss Marsh, of Detroit, has planned and organized a Mother's Club which meets at the schoolhouse to discuss discipline, diet, and every topic of importance to the well-being of the children, who must be better understood through these conferences. Her sister, a music teacher, has collected six thousand returns showing the kind of tunes Detroit children prefer. Superintendents Whitney and Hoyt have done good work during the year in popularizing the work both within and outside of the State. President Hall has lectured six times in various parts of the State during the past year.

*Maine.* At Farmington records have been kept of the work of the children, and many photographs taken, which accompany the reported observations. Reports on several of President Hall's syllabi have been handed Miss Swift, who says they have given her an insight into the natures of individuals never before understood and a revelation of pupils that could have been obtained in no other way. Mr. Small, of Clark University, has received thousands of returns from this center, which promises to rank next to New Jersey as a source of supply. Special credit is due to Mr. Purington, the local head of the work.

*Indiana.* Dr. Bryan, of the Indiana University, watches over the best interests of that State, and at the recent meeting of the N. E. A. made an able plea for the universities to resist the too popular demand for results that can be carried in a note book in the side pocket of such pseudo-psychologists as claim to be able to settle the affairs of the universe by an essay. Dr. Bryan was rather scathing in comparing some of the features of the educational meetings to a circus tent; his comments and sarcasm on some of the efforts that creep into print and public notice ticketed as child study were well timed, and it would be well if the cause could be saved from its friends by such an appeal, but it is likely to shake off incumbrances as time passes. Dr. Bryan attacked some of the syllabi that Child Study floats, saying that a good questionnaire is as hard to write as a poem.

Of between three and four score of questionnaires collected at Worcester, besides those published there, scarcely half a dozen suggest anything new, and many are so vague, inane and impracticable as to be worse than worthless. If a movement is tested by the rubbish it floats, the vitality of child study is here most abundantly shown. A good questionnaire should open a new, rich and distinct line of work. It should aim to accomplish one definite thing, and its form should be such as to insure the easiest and most effective presentation of results.

*Minnesota.* Minnesota formed an Association for Child Study on December 31, 1895. Superintendent S. S. Parr was elected president. Immediate arrangements were made for co-operation of the teachers in the State through Round Tables. Mr. Galbreath, of the State Nor-

mal School at Winona, took charge of this branch of the work, official reports of which may be found in the Child Study Monthly.

The Association has sent a comprehensive set of questions to graduates of the State Normal School, which will be of great service to those who attempt to make returns, and to the Society as well. The report from Winona of interesting discoveries is rather startling even to those of us who have long believed that much of the backwardness and indifference of children is attributable to physical causes and not to mental stupor.

To give direction in the study of children and in reading, a number of syllabi on the following topics were sent out: The Eyes of School Children and Their Defects; The Use of Stories; The Child, a Volume to be Read; Plan and Method in the Study of Children; A Study of Children's Readings; Unnoticed Educative Influences; Movements of Children; A Study of Memory; Unexpected and Incorrect Answers of Children; Unexpected and Irrelevant Questions of Children. Besides the many numerous and important references in the syllabi, the executive committee, to aid and encourage reading, has sent out a brief but very carefully selected bibliography on child study.

Professor Galbreath says in closing one of his papers on Child Study: For stupidity and stubbornness so frequently on the teachers' lips, we often need to substitute poor hearing or partial deafness and defective eye sight. This confession, let us remember, is a direct result of study of the pupils by the teachers.

E. A. Kirpatrick has issued a set of papers which he calls Suggestions for Observation; to be used by teachers in the Model Schools. Professor Kirkpatrick has also given us a new text book on Inductive Psychology which is an outgrowth of child study as all future psychologies must be in great measure.

L. H. Galbreath has formulated a course of study in eight parts, sent to teachers and others as Communication I, II, etc. Number II makes a study of my Place of the Story in Early Education, giving a list of books for collateral reading. IV is a Plan and Method in the Study of Children. V is a further consideration of Physical Phenomena, Rhythmic, Sense and Finger Songs as treated in my book before referred to, and VI is upon Reading, Spelling, Observation and Arithmetic. This involves a study of eye and ear mindedness. VII is A Study of the Unexpected and Incorrect Answers of Children. VIII is A Study of Unexpected and Irrelevant Questions of Children.

One unique feature of this association is its syllabus, which puts the teacher under examination. She is asked a number of pertinent questions: What interested you in the study of children? how has your teaching been affected by the new movement? do you believe in it? etc.

*Missouri.* Missouri is almost the only large northern State which, so far as is known, does nothing in child study except at Kansas City. President Hall has given three lectures at St. Louis on the subject during the year. The great High School there has three teachers of a philosophy of mind which he pronounces the most diluted of all the many extracts of Hegelism. The old formulæ are gone over in a way to inoculate the mind most effectively against the entrance of every trace of child study or empirical psychology. He knows no great educational center so dead to all the new philosophical interests that are so rapidly transforming the conceptions of the mind and its proper development as St. Louis, from the kindergarten to the university. This great city seems, with some individual exceptions, as dead and mechanized as it is self-complaisant, and is in the greatest need of an educational awakening.

*Wisconsin.* In Wisconsin all the work reported is based upon a

syllabus issued by Mr. James Morse, of the University of Wisconsin. This syllabus covers a number of studies in the moral development of children and the relation of the child to authority.

*South Carolina.* A few of the most earnest members of the original association for Child Study have organized a smaller club. Supt. Hamby has been making miscellaneous studies, particular attention being given to abnormal and defective children. This Association has an opportunity it should not neglect—that of studying the clay eating and snuff dipping children in isolated rural districts.

*Colorado.* Colorado has a Child Study section connected with its State Teachers' Association which has issued a syllabus for testing the conditions of mathematical work. The hints on the first page of their first syllabus should be incorporated in the Ten Commandments, so much needed at this stage of our Exodus from the pedagogical Egypt.

*Give your pupils no preliminary drill for these tests. Omit no test, "because your pupils have had no such work." Ability to do many things often develops without the teacher's aid. It will be no reflection on you if your pupils make many failures. Poor papers have often to the expert as great value as the better ones; and the absence of the poor ones may lead to wrong conclusions. Keep from them the fact that any special use will be made of their papers.*

*Ohio.* Dr. Aikins, of Cleveland, has been making ethical studies in the public schools, and although his returns are not yet fully worked up he draws the conclusion that, except with a few of the youngest children, the Ten Commandments have no place in their ethical life, and that as children advance in years the morals of obedience and conventional observances give place to ideals of active self-assertion for humanity. Sympathy and kindness come much earlier than retribution and justice. These early conclusions and sweeping deductions are part of the dangers that beset every student, especially in the domain of ethics. If men like Sir Francis Galton fail to apply rigid scientific methods in their ethical investigations, surely we should hold far-reaching conclusions like this about the Ten Commandments in abeyance until we have more data to work upon. We need to remember that the souls of children are in that divine flux of which Heraclitus writes, and we are perhaps more in danger of misapprehension of the deepest things in children's lives than in the characters of adults.

*Rhode Island.* Mr. Gilman C. Fisher sends the following: The Barnard Club School of Child Study has issued four syllabi and has organized seventeen Round Tables in different parts of the State, as follows: Six in Providence, five in Pawtucket, three in Cranston, one in Central Falls, one in Westerly, one in Cumberland, with a total membership of 216. The Pawtucket Round Tables have also formed a Union Association, with honorary members. The Barnard Club Syllabi are models in point of neatness for filing and reference. Many syllabi are restricted in their general value by the errors of omission as to name of any person or even place, so that once separated from the letter of the sender they are almost useless to the historian, and are deprived of the official value they would otherwise have.

*Nebraska.* The North Western Journal of Education has a department of child study, conducted by G. W. A. Luckey, of the University of Nebraska. This journal is edited by J. H. Miller and published in Lincoln. The July number is devoted to child study, the editing of this number being given entirely to Dr. H. K. Wolfe. Prof. Luckey has published in the American Journal of Psychology, Vol. VI, No. 4, an article on Comparative Observations of the Indirect Color Range of Children, Adults and Adults Trained in Color. This article was intended only as preliminary to a series for which Mr.

Luckey has already collected data, but has had no time to put the papers in form for the benefit of his fellow-students.

The Nebraska Society for Child Study was organized January 1, 1896, with a membership of 74, and in less than six months numbered 112. The Society justly prides itself on the fact that 100 teachers in Nebraska are subscribers to the *Illinois Child Study Monthly*. The University of Nebraska held a Summer School in June, 1896, with a department of pedagogy, the first course of which was devoted to child study, and is directing study of fears, anger, etc., by the four methods of Russell, Hall, Barnes and Scripture, but original work is not begun until the second year.

*Oregon.* In Oregon, Professor M. G. Royal reports that Miss Agnes Stowell, of the Eastern State Normal, has been studying individual children by methods suggested by Stanford University. A new Educational Club, under the auspices of the State University, is about to publish a new journal, with a special department and editor for child study.

*Alabama.* In Alabama, Birmingham and Mobile report some work in observing and recording, and at the last State Association three papers were presented, one by Mrs. Cunningham on Tests in Arithmetic, carried through several grades and dealing with large numbers of pupils, and bringing out the imitative, analytic and reasoning powers of children. Mr. Gilbert, of Florence, described ten cases of discipline and their psychological motives. Professor Van Wie described observations made by his own pupil teachers. He seeks to make studies both of classes and individuals, and although he thinks his own work desultory, regards it as most salutary for those making it.

Had it seemed wise to extend my survey outside this country, very interesting paragraphs could be added about the progress of the work from the four chief British centers—London, Dublin, Cheltenham and Glasgow, where societies were organized more than a year ago by British students at the Clark Summer School. Child study is now represented at teachers' meetings, and at the Summer School at Cambridge University and elsewhere; Miss Mary Louch has sent in a valuable article on Children's Interests and Aims. A few returns of exceptional value have been received at Clark University from France and Germany, and others from Australia, Japan, South Africa, China, South America, North Africa and elsewhere. Another year it would be desirable to have these included in a general survey.

If the movement stopped to-day one result is already secure. Teachers have grown more interested in individual pupils, understand them better and sympathize with them more. Parents have acquired deeper reverence and greater love for childhood. In place of the old-time child literature expressing parental sentiment toward childhood, the ideal of a new and very different juvenile literature which is sure to make the old seem conventional, artificial and unnatural, is being developed. That periodical, religious and other juvenile literature, is in need of regeneration, is already apparent. If one of the chief tests of a civilization is the way in which it regards and treats childhood, ever so little change in this all-important regard, although it may be too vast for the average teacher or parent to even glimpse it, is of incalculable beneficence. This result, I think, is the largest of all possible products of the movement, and may be said to be already secured. It has changed the methods and standpoint of thousands who have made no returns whatever, and of thousands more who have jotted down notes which are of no scientific importance. Again, it has already been triumphantly shown that any intelligent parent or teacher may jot down facts about dolls, fears, anger, or answer ques-

tions about moon, folk lore, fads, etc., which are of the utmost value for science. Some psychological facts are almost as concrete as fossils, which are the same, whether picked up by a man of science or by a peasant. While plenty of points need expert treatment, it is a feature of all anthropological work that the common observer and the specialist can co-operate.

Perhaps the result of child study that appeals most directly to the popular mind is in the direction of the physical wrongs done children with defective eyes and ears. Henceforth it is agreed that the seating of school children shall conform to their needs in this regard; methods of teaching reading and writing must be and already are modified in some schools. Less suppression of spontaneous movements is practiced since child study has proven that such movements are necessary to every normal child. The abandonment of fine work in kindergartens is due to study of the children as affected by the work. Conditions of fatigue are better understood and study hours arranged with reference to the child's best study time. Drawing will have a larger amount of time given to it in the first years of school life, in accordance with the newly-discovered interest of children in it as a means of expression, not in any as yet organized school of drawing, but something based on the children's interests and abilities. Child study has called attention to the individual child as nothing else could have done, and has put an effectual dam in the way of much of the old-time mass teaching. The new relation between parent and teacher, which mutual study of the children has brought about, is one of the most hopeful results of this work. Most important of all, perhaps, is the new life which every teacher testifies she has received from the more natural and sympathetic relation which child study immediately establishes wherever it is undertaken. And it is the teacher who receives, and will continue to receive, the first fruits of these studies, for there is nothing in all the world so mysterious, so beautiful and inspiring, so refreshing to the deepest instincts of our complex natures, as direct personal contact with the little children.

NOTE.—The writer intends to continue these annual reports and begs all readers to send to her address, West Roxbury, Mass., any printed or written matter stating what they or their acquaintances do during the academic year 1896-7.

